UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

BELLMAN & SYMFON NORTH AMERICA INC., Plaintiff, v. JWIN ELECTRONICS CORPORATION DBA ILUV CREATIVE TECHNOLOGY, Defendant.	No. 2:23-cv-00742 COMPLAINT FOR DECLARATORY JUDGMENT JURY TRIAL DEMANDED

Plaintiff Bellman & Symfon North America Inc. ("B&S" or "Plaintiff") respectfully files this Complaint seeking declaratory judgments that Plaintiff does not directly or indirectly infringe claim 1 of United States Patent No. 10,713,929 ("the '929 Patent") (Exhibit A), and that claim 1 of the '929 patent is invalid and/or unenforceable. Plaintiff further seeks judgment that Defendant jWIN Electronics Corporation (d.b.a. iLuv Creative Technology) ("jWIN" or "Defendant") has engaged in acts of unfair competition and tortious interference with Plaintiff's advantageous business relationships and/or contracts. In support of these requests, Plaintiff alleges, on information and belief, as follows:

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I. NATURE OF THE CASE

1. Plaintiff filed this action in view of Defendant's willful and deliberate assertion, and subsequent refusal to withdraw this assertion, of the '929 Patent against Plaintiff, despite knowledge that the '929 Patent is invalid.

2. Through a request filed under Amazon's "Amazon Patent Evaluation Express Procedure" ("APEX"), Defendant has induced Amazon.com ("Amazon") to remove Plaintiff's Vibio Wireless Bed Shaker (Amazon ASIN B082VHC69X) product (the "Accused Product") from Amazon's internet sales platform based on these baseless accusations of infringement of claim 1 ("the Asserted Claim") of the '929 Patent. *See* Exhibit B, Amazon Patent Evaluation Express Agreement executed by Kongsik Kim on behalf of jWIN.

3. Despite being furnished with detailed information demonstrating that the prior art discloses every element of the Asserted Claim of the '929 Patent and more than ample time to review and respond, Defendant has repeatedly delayed responding and has thus far been unable to articulate a plausible position to refute that information. Defendant has also refused to withdraw its infringement allegations and thus Amazon has not reinstated the listing of Plaintiff's Accused Product.

4. Damages resulting from Defendant's improper and tortious mis-assertion of the '929 Patent continue to accrue every day that Plaintiff's Accused Product is de-listed from Amazon's internet sales platform.

5. Accordingly, Plaintiff brings this action under the patent laws of the United States, 35 U.S.C. § 1, *et. seq.*, the Declaratory Judgment Act, 28 U.S.C. § 2201, and Washington state law. Plaintiff seeks declaratory judgment that at least the Asserted Claim of the '929 Patent

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is not infringed and/or is invalid, seek damages for Defendant's tortious conduct, and any other form of relief this Court deems appropriate.

II. PARTIES

6. Plaintiff Bellman & Symfon North America Inc. is a corporation organized and existing under the laws of the State of Delaware and maintains a place of business at 5509 Business Dr, Unit B, Wilmington, NC 28405-8445.

7. Defendant jWIN Electronics Corporation, d.b.a. iLuv Creative Technologies, is, upon information and belief, a corporation organized and existing under the laws of the State of New York and maintains a place of business at 2 Harbor Drive, Port Washington, NY 11050.

III. JURISDICTION AND VENUE

8. This action arises under the patent laws of the United States, 35 U.S.C. § 1, *et. seq.*, the Declaratory Judgment Act, 28 U.S.C. § 2201, and Washington state law. This Court has subject matter jurisdiction over the federal law claims in action pursuant to 28 U.S.C. §§ 1331 and 1338(a). This Court has supplemental jurisdiction over the state law claims in this action pursuant to 28 U.S.C. § 1367(a) and 28 U.S.C. § 1338(b).

9. This Court has personal jurisdiction over the Defendant in this action at least because Defendant commenced and continues to maintain enforcement proceedings regarding the '929 patent in this judicial district. *See, e.g., Campbell Pet Co. v. Miale*, 542 F.3d 879, 884-86 (Fed. Cir. 2008) (specific personal jurisdiction satisfied by patentee's "extra-judicial patent enforcement" efforts in forum state). Specifically, Defendant sent the APEX request to Amazon (410 Terry Ave. N, Seattle, WA 98109). Each claim presented herein arises out of Defendant's actions directed at this forum, which gives rise to sufficient minimum contacts under Washington's Long-Arm statute. Wash Rev. Code §4.28.185.

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10. This Court also has personal jurisdiction over Defendant because Defendant expressly "agree[d] to the jurisdiction and venue of the federal and state courts located in King County, Seattle, Washington" when it submitted its APEX request to Amazon in this judicial district. Exhibit B at p. 1, ¶5.

11. For the same reasons, venue is proper in this District pursuant to 28 U.S.C. § 1391(b) because the events giving rise to this action took place within this District.

IV. BACKGROUND

12. Products having the Bellman & Symfon brand have been marketed and sold to improve the lives of the deaf and hearing impaired for over 30 years. *See* https://bellman.com/en/about-us/our-story/. Such products include, for example, alerting devices, listening devices, personal amplifiers, headsets, and more. *See* https://bellman.com/en/product/#block-24089. These innovative, life-changing products have garnered accolades, including design awards, and are sold around the world.

13. As particularly relevant to this dispute, Plaintiff markets and sells the Accused Product – the Vibio device. *See* Exhibit C, printout of https://bellman.com/en/product/stand-alone-products/vibio-bed-shaker/ (retrieved March 23, 2023).

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14. The Vibio device is a wireless "bed shaker" alarm device that vibrates at times set by the user using a corresponding mobile device application. *Id*. Plaintiff's Vibio device is and has been available for sale in the United States from various sources, including Amazon. Amazon ASIN B082VHC69X was listed in December 2019 and was continuously available until it was removed from that marketplace in January 2023 as a direct result of Defendant's improper assertion of the '929 patent. Exhibit D, Web Archive capture of https://www.amazon.com/dp/B082VHC69X/, dated May 30, 2022; Exhibit E, January 17, 2023 email from Amazon to Plaintiff regarding removal of listing for ASIN B082VHC69X.

15. Defendant describes its "iLuv" branding as a "worldwide premium brand," that is "headquartered in New York with distribution centers on both the East and West Coasts of the U.S and worldwide." Defendant's website states that the iLuv brand provides "the most comprehensive accessories line for the Apple and smartphone markets." *See*

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http://jwin.com/brand-iluv.asp. On information and belief, Defendant's iLuv branded products are available for sale on the internet, including at least from the website iLuv.com and the digital marketplace provided by Amazon.

16. Defendant is a direct competitor of Plaintiff. On information and belief, devices marketed and sold by Defendant that compete with the Accused Product include at least the iLuv SmartShaker 3 product, which is available for sale on the Amazon marketplace. Exhibit F, printout of https://www.amazon.com/iLuv-SmartShaker-Vibration-Bluetooth-Notification/dp/B08V6QCBTS (retrieved March 23, 2023).

17. On December 23, 2022, Defendant submitted an APEX request to Amazon through its attorney Kongsik Kim. Exhibit B at 2. The APEX request accused several products listed on Amazon's marketplace of infringing the Asserted Claim of the '929 patent, including Plaintiff's Accused Product, ASIN B082VHC69X. *Id*.

18. That evening, Amazon emailed Plaintiff that the APEX request was filed identifying the Accused Product. Amazon's email indicated that, among other things, "[i]f you do not either resolve your claim with the patent owner directly, or agree to participate in the neutral evaluation process, we will remove the listings at the end of this email from Amazon.com." Exhibit G, email, Amazon.com to Bellman dated December 23, 2022. Unfortunately, Amazon's email was not received by Plaintiff until nighttime, and the next day was Christmas Eve. As such, the email was overlooked during the holiday season, and Plaintiff did not respond to Amazon's notice.

19. Amazon sent a second email on January 17, 2023, notifying Plaintiff that the Accused Product listing had been taken down. Exhibit E. After Plaintiff received Amazon's January 17, 2023 email, Plaintiff contacted Defendant's representative of record, Mr. Kongsik

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Kim, on January 24, 2023. Plaintiff explained that the '929 patent was plainly invalid in light of at least the ZBand silent alarm product, which had been publicly available and sold in the United States and elsewhere prior to the earliest possible priority date for the '929 patent, and provided Defendant with a claim chart demonstrating how the prior art discloses every element of claim 1. *See* Exhibit H, ZBand Claim Chart. Plaintiff requested that jWIN withdraw its APEX submission. Mr. Kim refused and argued that, based on his interpretation of the limitations of the Asserted Claim, the prior did not teach or suggest every element thereof.

20. Three weeks later, on February 20, 2023, Mr. Kim for the first time indicated that infringement charts were submitted to Amazon as part of the APEX request and provided a copy to Plaintiff. The claim chart Mr. Kim provided set forth an infringement position that relied upon an inconsistent interpretation of the claim language relative to Mr. Kim's argument regarding invalidity. Specifically, Mr. Kim questioned whether the information submitted regarding the prior art ZBand product was sufficient to demonstrate that the product included a separate controller (i.e. processor) performing the function recited in the claims.

21. On February 21, 2023, Plaintiff responded to Mr. Kim's email pointing out his improperly contradictory, nose-of-wax treatment of the limitations of the Asserted Claim. Plaintiff also pointed out the specific details within the information previously furnished, that demonstrated unambiguously that the prior art ZBand product necessarily had a separate controller performing the recited functions. Plaintiff also provided Mr. Kim with additional prior art disclosing or suggesting every element of the Asserted Claim.

22. In about February 2023, Plaintiff contacted Mr. Declan Leonard, one of the co-founders of the company that developed and commercialized the ZBand. Mr. Leonard personally designed and implemented the technical features of the ZBand product and developed

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the software application for interacting with the ZBand product. From personal knowledge, Mr. Leonard was able to directly and unambiguously refute the doubts that Mr. Kim expressed as to whether the ZBand included a separate controller and what its functions were. He agreed to assist and prepared a sworn declaration regarding the ZBand product.

23. On March 7, Plaintiff provided Mr. Kim with a second claim chart demonstrating that each and every limitation of the Asserted Claim was also disclosed a second prior art reference: U.S. Patent No. 8,812,259 (Exhibit I), published before the earliest priority date of the '929 patent and assigned to Fitbit LLC ("the Fitbit Patent"), and that the asserted claim was therefore invalid as anticipated by the Fitbit patent. *See* Exhibit J, Fitbit Claim Chart

24. Despite initially promising to respond later in the week of March 7, Defendant has yet to respond to the information demonstrating that the Asserted Claim is invalid as anticipated by the Fitbit Patent. On March 31, Mr. Kim indicated that he was working on the claim chart and would respond shortly.

25. On April 27, 2023, having received no further response from Mr. Kim, Plaintiff provided a Declaration from Mr. Leonard confirming that the prior ZBand product includes each and every feature of the Asserted Claim, including those that Mr. Kim had previously questioned. Plaintiff again urged Mr. Kim to provide a response to Plaintiff's detailed assertions and claim chart demonstrating the invalidity of the Asserted Claim based on the Fitbit Patent, which Mr. Kim had in his possession since March 7. Plaintiff also requested that Mr. Kim respond to the Declaration that directly refuted Mr. Kim's prior position.

26. Despite providing Defendant with detailed information demonstrating that the Asserted Claim is invalid as anticipated by at least two different prior art references, and despite having more than ample time to respond, Defendants have been unable or unwilling to assert any

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plausible response. And yet, Defendants refuse to rectify their improper assertion of the '929 patent. Meanwhile, Plaintiff's product continues to be unjustly excluded from the Amazon marketplace based on Defendant's acts. Because Plaintiff can wait no longer to rectify the harm occasioned by Defendant's behavior, Plaintiff now respectfully seeks the relief requested in this Complaint and any other relief the Court deems appropriate.

V. THE PATENT IN SUIT

27. The face of the '929 patent indicates that it was filed on January 4, 2019 as U.S. Patent Application No. 16/240,000, and issued on July 14, 2020. The '929 patent states that it is a continuation of U.S. Patent Application No. 16/167,911, filed on October 23, 2018 (issued as U.S. Patent No. 10,311,708), a continuation of U.S. Patent Application No. 14/937,797, filed on November 10, 2015 (issued as U.S. Patent No. 10,147,305). Exhibit A, '929 patent at cover pages 1-2. The '929 patent also claims priority to U.S. Provisional Patent Application No. 62/078,460, filed November 12, 2014. *Id*.

28. The '929 patent identifies one inventor, Justin Chiwon Kim, and is assigned on its face to jWIN Electronics Corporation, Port Washington, NY. *Id*.

29. On information and belief, the '929 patent is terminally disclaimed over both U.S. Patent Nos. 10,147,305 and 10,311,708.

30. The '929 patent purports to be directed to "An alarm and monitoring system including a primary device and at least one secondary device, the alarm and monitoring system including at least one controller configured to: determine whether at least one alarm event is set; establish a wireless communication between a primary device and the secondary device, when it is determined that the alarm event has been set; transmit an alarm event signal including alarm information from the primary device to the secondary device in accordance with the alarm event

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that is determined to have been set; generate an alarm signal by the secondary device in accordance with at least the alarm information; and render the generated alarm signal on a rendering device." Exhibit A, '929 pat. at Abstract.

31. The '929 patent recites sixteen (16) claims, of which claims 1 and 9 are independent. Claim 1 (the Asserted Claim) purports to be directed to "[a]n alarm system" and is reproduced below:

> 1. An alarm system comprising:
>
> a primary device having a first controller; and
>
> at least one secondary device having at least one secondary controller and at least one rendering device;
>
> wherein the first controller is configured to (i) determine whether at least one alarm event is set on the primary device, (ii) establish a wireless communication between the primary device and the secondary device when determination is made that the alarm event has been set on the primary device, (iii) generate a first alarm signal including first alarm rendering instructions based on the alarm event set, and (iv) transmit the first alarm signal including the first alarm rendering instructions from the primary device to the secondary device, and
>
> wherein the secondary controller is configured to (i) generate second alarm rendering instructions for the rendering device based on the first alarm rendering instructions and (ii) render the second alarm rendering instructions on the rendering device.

VI. COUNT I: DECLARATORY JUDGMENT OF INVALIDITY OF THE '929 PATENT

32. Plaintiff incorporates and re-alleges the allegations in the preceding paragraphs of the Complaint as if fully set forth herein.

33. Defendant purports to be the owner of the '929 Patent with all right, title, and interest thereto.

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34. The Asserted Claim of the ’929 Patent is invalid at least for failure to comply with the requirements for patentability under Title 35 of the U.S. Code, including at least one or more of 35 U.S.C. §§ 102, 103, and 112.

35. Examples of prior art establishing invalidity of the Asserted Claim includes at least the Zband device, the FitBit One device, each of which was publicly available and sold in the United States and elsewhere before the earliest possible priority date of the ’929 patent as well as user manuals and other documentation associated with the Fitbit One device and the ZBand device, Irish Patent Application No. IE S2012/0235 A2, U.S. Patent No. 8,812,259, each published before the earliest possible priority date of the ’929 patent and others.

36. For the reasons set forth above, an actual and justiciable controversy exists between Plaintiff and Defendant regarding whether Plaintiff has infringed at least the Asserted Claim of the ’929 Patent.

37. A judicial declaration is necessary to determine the parties’ respective rights with respect to the ’929 Patent.

38. Plaintiff is entitled to a judgment declaring that at least Asserted Claim 1 of the ’929 patent is invalid.

VII. COUNT II: DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE ’929 PATENT

39. Plaintiff incorporates and re-alleges the allegations in the preceding paragraphs of the Complaint as if fully set forth herein.

40. Defendant purports to be the owner of the ’929 Patent with all right, title, and interest thereto.

41. In its APEX request to Amazon, Defendant asserted that Plaintiff’s Accused Product infringes claim 1 of the ’929 Patent. *See* Exhibit B at 2.

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42. Plaintiff's Accused Product does not meet, either literally or under the doctrine of equivalents, every element of the Asserted Claim of the '929 Patent.

43. In particular, Plaintiff's Accused Product does not meet at least the following limitation recited in the Asserted Claim: "wherein the first controller is configured to (i) determine whether at least one alarm event is set on the primary device, (ii) establish a wireless communication between the primary device and the secondary device when determination is made that the alarm event has been set on the primary device, (iii) generate a first alarm signal including first alarm rendering instructions based on the alarm event set, and (iv) transmit the first alarm signal including the first alarm rendering instructions from the primary device to the secondary device."

44. Accordingly, Plaintiff has not and does not infringe the Asserted Claim of the '929 Patent.

45. An actual and justiciable controversy therefore exists between Plaintiff and Defendant regarding whether Plaintiff has infringed the Asserted Claim of the '929 Patent.

46. A judicial declaration is necessary to determine the parties' respective rights with respect to the '929 Patent.

47. Plaintiff is entitled to a judgment declaring that it has not infringed and does not infringe at least the Asserted Claim of the '929 Patent.

VIII. COUNT III: TORTIOUS INTERFERENCE WITH CONTRACT OR BUSINESS EXPECTANCY

48. Plaintiff incorporates and re-alleges the allegations in the preceding paragraphs of the Complaint as if fully set forth herein.

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49. This claim arises under Washington state law and is based on Defendant's intentional and improper interference in the contract and/or business relationships between Plaintiff and Amazon, and between Plaintiff and Amazon's customers.

50. As set forth above, Defendant was and is aware that Plaintiff and Amazon maintained a business relationship whereby Plaintiff's Accused Product was sold on Amazon's online marketplace.

51. Defendant's APEX request to Amazon was and is intended to result in the removal of the listing of the Accused Product on Amazon's online marketplace.

52. As a result of Defendant's willful and improper actions, Amazon did in fact remove the Accused Product and the listing has not been restored.

53. Defendant's submission of and ongoing refusal to withdraw its APEX request constitutes an improper purpose at least because Defendant knows or should have known that the Asserted Claim of the '929 patent is invalid and/or not infringed by the Accused Product.

54. Defendant's conduct has resulted in the ongoing accrual of pecuniary damages to Plaintiff.

IX. COUNT IV: VIOLATION OF WASHINGTON STATE CONSUMER PROTECTION ACT

55. Plaintiff incorporates and re-alleges the allegations in the preceding paragraphs of the Complaint as if fully set forth herein.

56. This claim is based on Defendant's unfair and deceptive trade practices in violation of Washington's Consumer Protection Act, codified at Wash. Rev. Cod § 19.86.020 et seq.

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57. Defendant has engaged in unfair and/or deceptive acts by knowingly and without justification continuing to maintain what Defendant knows to be materially false representations to third party Amazon.

58. Defendant falsely stated that Plaintiff's Accused Product infringes the Asserted Claim of the '929 patent. As discussed in more detail above, at the time Defendant made the false statements to Amazon, Defendant knew and/or should have known that such statements to were false or were made with reckless disregard for the truth because the Accused Product does not infringe the Asserted Claim of the '929 patent, and because the Asserted Claim of the '929 patent is invalid.

59. Moreover, as set forth above, to the extent Defendant was not aware at the time it began its enforcement efforts with Amazon that the Asserted Claim of the '929 patent is not infringed by the Accused Product and/or is invalid, Defendant certainly has such knowledge now.

60. Defendant's act was in and affecting commerce because it was intended to and in fact did remove Plaintiff's Accused Product from Amazon's online marketplace, where the Accused Product had been sold prior to its removal.

61. Defendant's actions caused immediate and ongoing injury to Plaintiff's business. Prior to Defendants' statements to Amazon and the subsequent removal of Plaintiff's Accused Product, Amazon sales of the Accused Product generated substantial revenue for Plaintiff. That revenue stream has been eliminated as a result of Defendant's improper actions. Furthermore, because of the absence of Vibio on Amazon, Defendant is also destroying Plaintiff's ranking on Amazon, which will take a long time to repair once the product is reinstated.

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62. Defendant's act affects the public interest at least because customers who purchased the Accused Device on Amazon cannot now access warranty and customer service channels previously available through Amazon's website. *See generally*, Exhibit D. Furthermore, Defendant's act of weaponizing its patent, and then refusing to rectify the damage caused by wielding it improperly, is contrary to the public interest in the issuance and enforcement of valid patents.

63. Defendant acted and continues to act willfully, deliberately, and in bad faith in falsely asserting to Amazon that the Accused Product infringes the Asserted Claim of the '929 patent. These unlawful, unfair, and deceptive business practices have harmed Plaintiff's reputation and sales and will continue to do so unless and until Defendant's unfair misrepresentations to Amazon regarding the Accused Product are rectified, and Plaintiff's product listing is restored.

64. Plaintiff has suffered damages as a direct and proximate consequence of Defendant's conduct. Accordingly, Plaintiff is entitled to damages in an amount to be proven at trial.

X. PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for judgment on the Complaint as follows:

A. A judgment that the Asserted Claim of the '929 patent is not infringed by Plaintiff or Plaintiff's Accused Product;

B. A judgment that the Asserted Claim of the '929 patent is invalid and/or unenforceable;

C. Damages sufficient to compensate Plaintiff for Defendant's unfair and tortious conduct;

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D. Damages for Defendant's unfair acts in violation of the Washington Consumer Protection Act;

E. An order requiring Defendant to withdraw or retract its improper request to Amazon that resulted in the de-listing of Plaintiff's products;

E. A declaration that this case is exceptional under 35 U.S.C. § 285 and a concomitant award of Plaintiff's reasonable attorney's fees, costs, and any expenses incurred in by Plaintiff in this action;

F. An order awarding Plaintiff its costs in filing and prosecuting this action; and

G. Any other relief this Court deems just and proper under the circumstances.

XI. JURY DEMAND

Plaintiff demands a trial by jury on all issues so triable.

DATED May 19, 2023.

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EXHIBIT A

US010713929B2

(12) **United States Patent**
Kim

(10) **Patent No.: US 10,713,929 B2**
(45) **Date of Patent: *Jul. 14, 2020**

(54) **ALARM AND MONITORING SYSTEM AND METHOD OF OPERATION THEREOF**

(71) Applicant: **JWIN ELECTRONICS CORP.**, Port Washington, NY (US)

(72) Inventor: **Justin Chiwon Kim**, Port Washington, NY (US)

(73) Assignee: **JWIN ELECTRONICS CORPORATION**, Port Washington, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **16/240,000**

(22) Filed: **Jan. 4, 2019**

(65) **Prior Publication Data**

US 2019/0180601 A1 Jun. 13, 2019

Related U.S. Application Data

(63) Continuation of application No. 16/167,911, filed on Oct. 23, 2018, now Pat. No. 10,311,708, which is a (Continued)

(51) **Int. Cl.**
G08B 25/10 (2006.01)
A61B 5/00 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***G08B 25/10*** (2013.01); ***A61B 5/00*** (2013.01); ***A61B 5/74*** (2013.01); ***H04M 1/72566*** (2013.01); ***H04M 19/047*** (2013.01); *A61B 5/11* (2013.01); *A61B 5/4806* (2013.01); *A61B 2562/0219* (2013.01); *H04M 1/7253* (2013.01); *H04M 1/72569* (2013.01)

(58) **Field of Classification Search**
CPC A61B 5/00; G08B 25/10; H04M 19/047; H04M 1/7253; H04M 1/72566; H04M 1/72569
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,666,331 A 9/1997 Kollin
6,847,295 B1 * 1/2005 Taliaferro G08B 21/0211 340/539.1

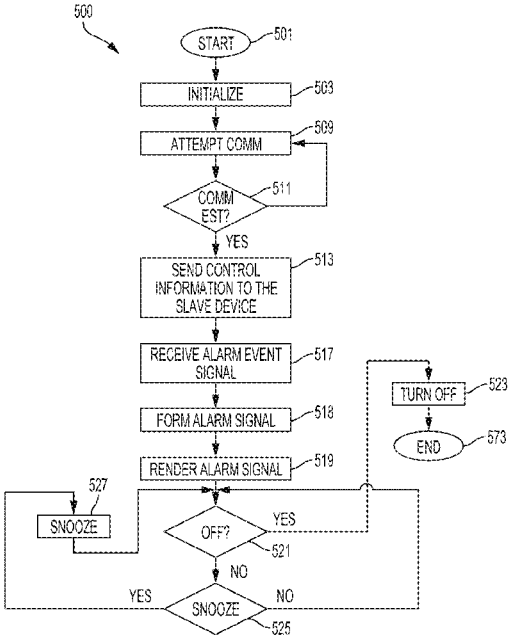
(Continued)

Primary Examiner — Sisay Yacob
(74) *Attorney, Agent, or Firm* — Nelson Mullins Riley & Scarborough LLP; Kongsik Kim, Esq.

(57) **ABSTRACT**

An alarm and monitoring system including a primary device and at least one secondary device, the alarm and monitoring system including at least one controller configured to: determine whether at least one alarm event is set; establish a wireless communication between a primary device and the secondary device, when it is determined that the alarm event has been set; transmit an alarm event signal including alarm information from the primary device to the secondary device in accordance with the alarm event that is determined to have been set; generate an alarm signal by the secondary device in accordance with at least the alarm information; and render the generated alarm signal on a rendering device.

16 Claims, 10 Drawing Sheets



Related U.S. Application Data

continuation of application No. 14/937,797, filed on Nov. 10, 2015, now Pat. No. 10,147,305.

(60) Provisional application No. 62/078,460, filed on Nov. 12, 2014.

(51) **Int. Cl.**

H04M 1/725	(2006.01)
H04M 19/04	(2006.01)
A61B 5/11	(2006.01)

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,336,168	B2	2/2008	Kates	
2005/0141677	A1*	6/2005	Hyttinen	H04M 1/72566 379/50
2006/0273895	A1	12/2006	Kollin	
2007/0132562	A1*	6/2007	Fukumoto	B62D 15/0265 340/435
2007/0205887	A1*	9/2007	Cho	G08B 13/1427 340/539.15
2007/0285260	A1*	12/2007	Watanabe	G08B 21/0269 340/573.4
2008/0018459	A1*	1/2008	Derrick	G07C 1/20 340/539.13
2009/0303031	A1*	12/2009	Strohallen	G08B 25/10 340/501
2011/0140868	A1*	6/2011	Hovang	G08B 25/008 340/12.55
2011/0296030	A1	12/2011	Gaxiola	
2012/0257878	A1*	10/2012	Fujimura	H04N 7/17318 386/291
2012/0329481	A1*	12/2012	Malkin	G01S 5/02 455/456.1
2013/0234853	A1	9/2013	Kazerouni	
2014/0031082	A1*	1/2014	Zishaan	G08B 21/12 455/556.1
2014/0325448	A1	10/2014	Han et al.	
2015/0052578	A1*	2/2015	Yau	G08B 25/10 726/3
2015/0061859	A1*	3/2015	Matsuoka	G08B 29/185 340/501
2015/0065095	A1*	3/2015	Seo	H04L 67/2823 455/412.2
2015/0091723	A1	4/2015	Fiedler et al.	
2015/0097680	A1	4/2015	Fadell et al.	
2015/0206421	A1	7/2015	Moffa	
2015/0332580	A1	11/2015	Bokhary	
2015/0339913	A1	11/2015	Lyman et al.	
2016/0072821	A1	3/2016	Wu	
2016/0085220	A1	3/2016	Yang et al.	
2016/0272112	A1	9/2016	Degrazia et al.	
2017/0006595	A1	1/2017	Zakaria et al.	

* cited by examiner

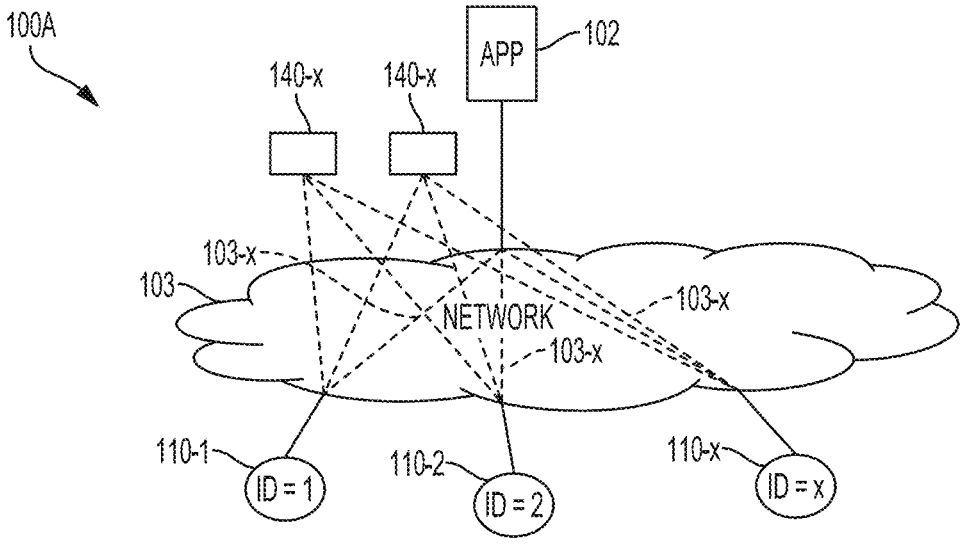

100A
APP
102
140-x
140-x
103-x
103
NETWORK
103-x
103-x
110-1
ID = 1
110-2
ID = 2
110-x
ID = x

FIG. 1A

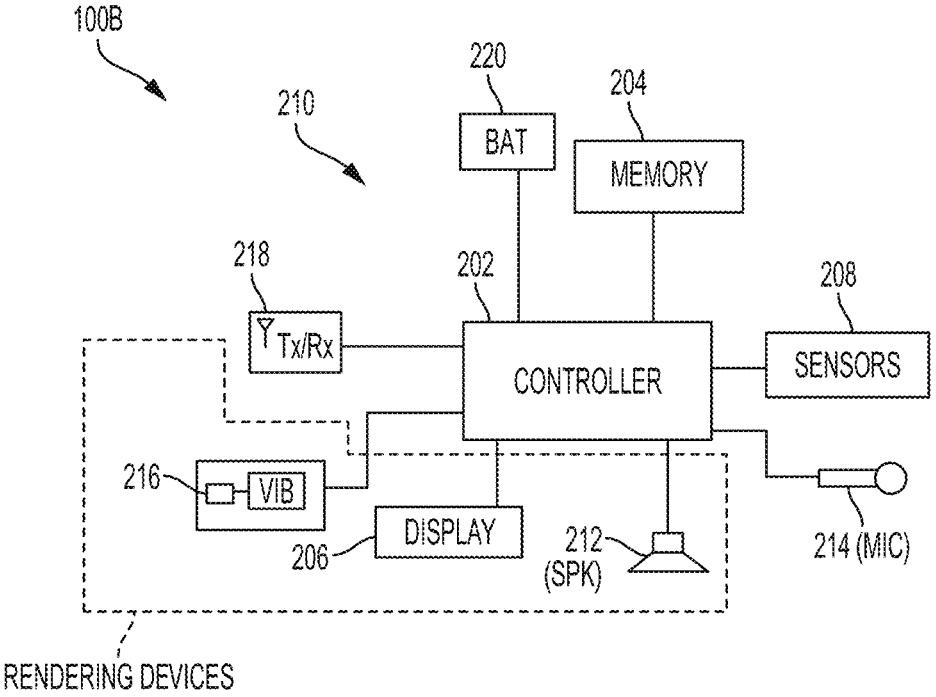

100B
210
220
BAT
204
MEMORY
218
Tx/Rx
202
CONTROLLER
208
SENSORS
216
VIB
DISPLAY
206
212
(SPK)
214 (MIC)
RENDERING DEVICES

FIG. 1B

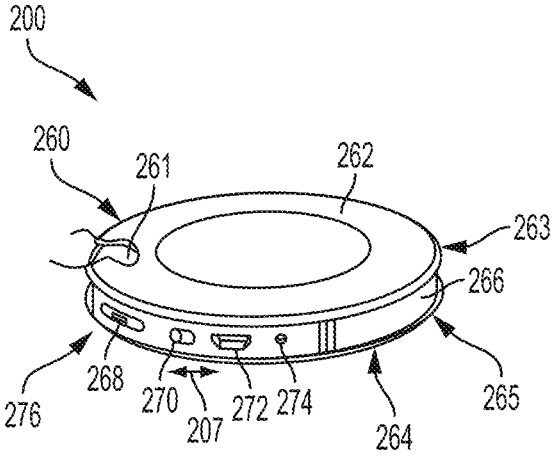


FIG. 2A

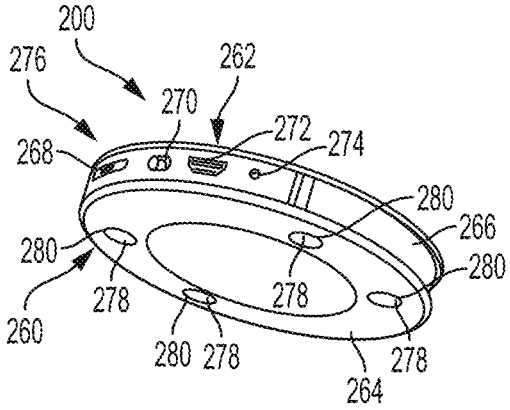


FIG. 2B

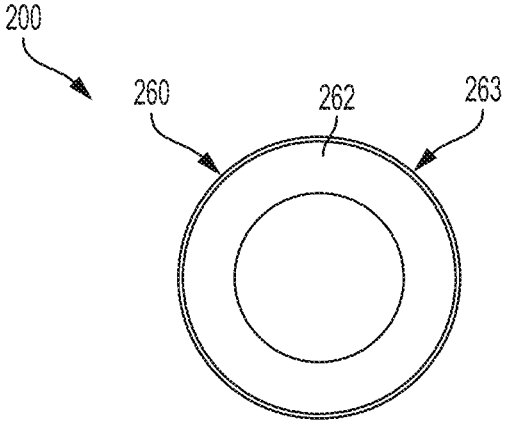


FIG. 3A

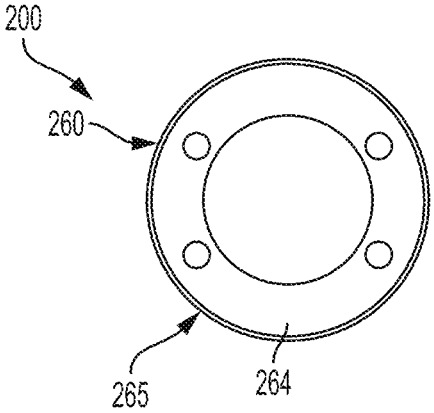


FIG. 3B

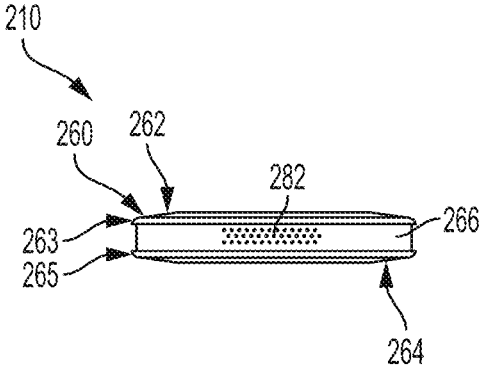


FIG. 3C

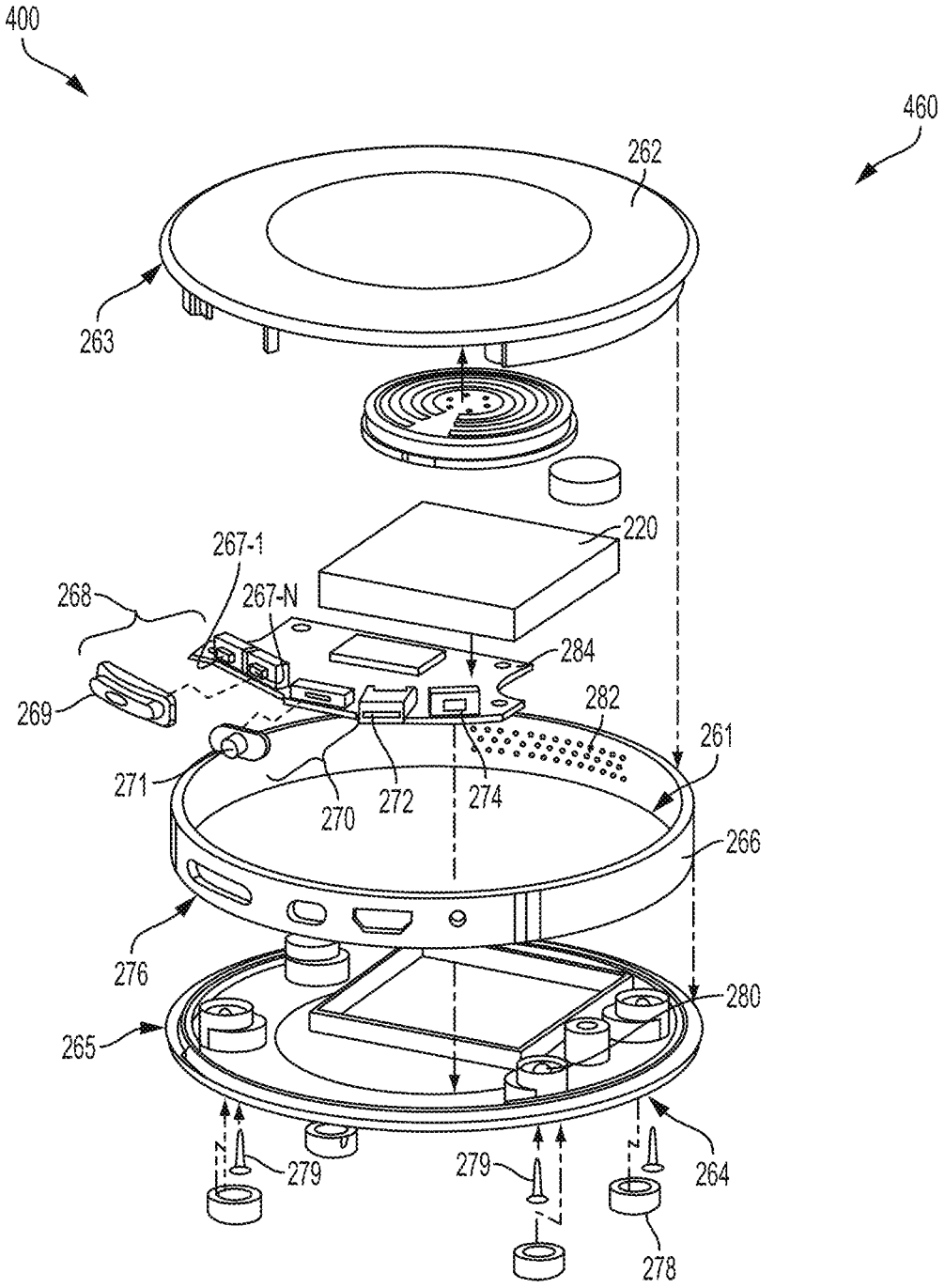

400
460
262
263
220
267-1
267-N
268
284
269
282
261
271
270
272
274
266
276
280
265
279
279
264
278

FIG. 4

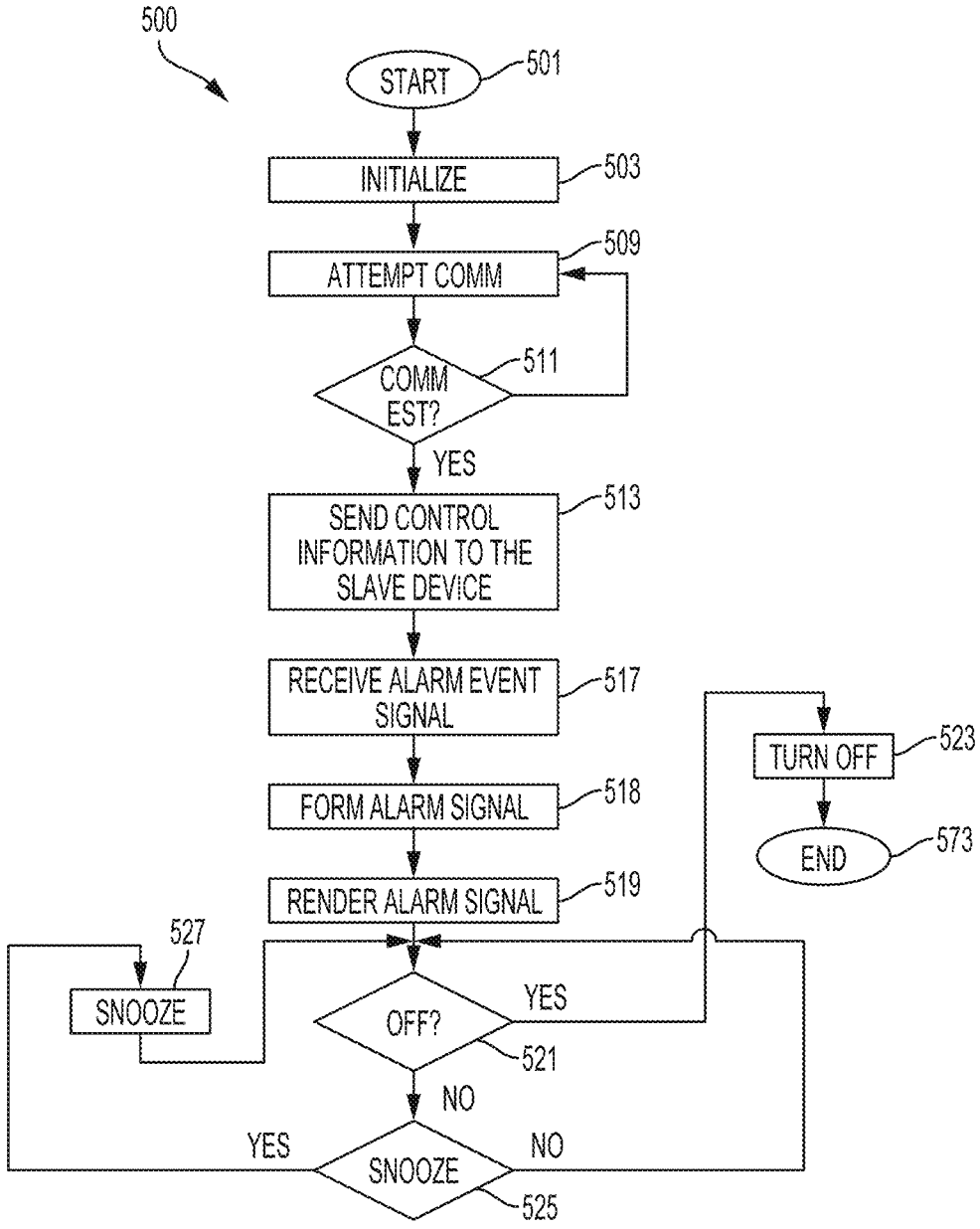

500
START
501
INITIALIZE
503
ATTEMPT COMM
509
COMM EST?
511
YES
SEND CONTROL INFORMATION TO THE SLAVE DEVICE
513
RECEIVE ALARM EVENT SIGNAL
517
FORM ALARM SIGNAL
518
RENDER ALARM SIGNAL
519
OFF?
521
YES
NO
SNOOZE
525
YES
NO
SNOOZE
527
TURN OFF
523
END
573

FIG. 5

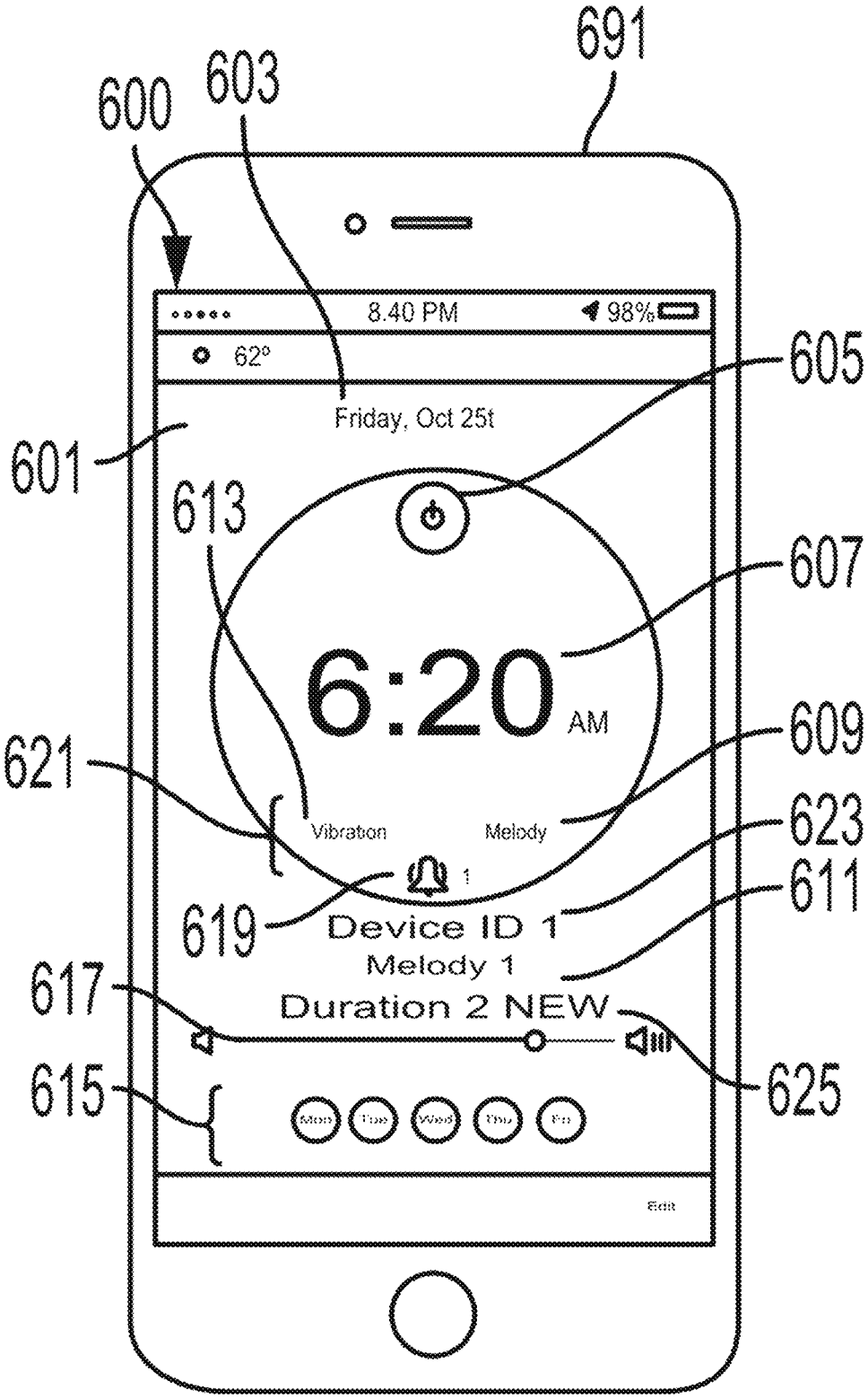

691
600
603
8.40 PM
98%
62°
605
Friday, Oct 25t
601
613
607
6:20 AM
609
621
Vibration
Melody
623
1
619
Device ID 1
611
Melody 1
617
Duration 2 NEW
615
625
Mon
Tue
Wed
Thu
Fri
Edit

FIG. 6

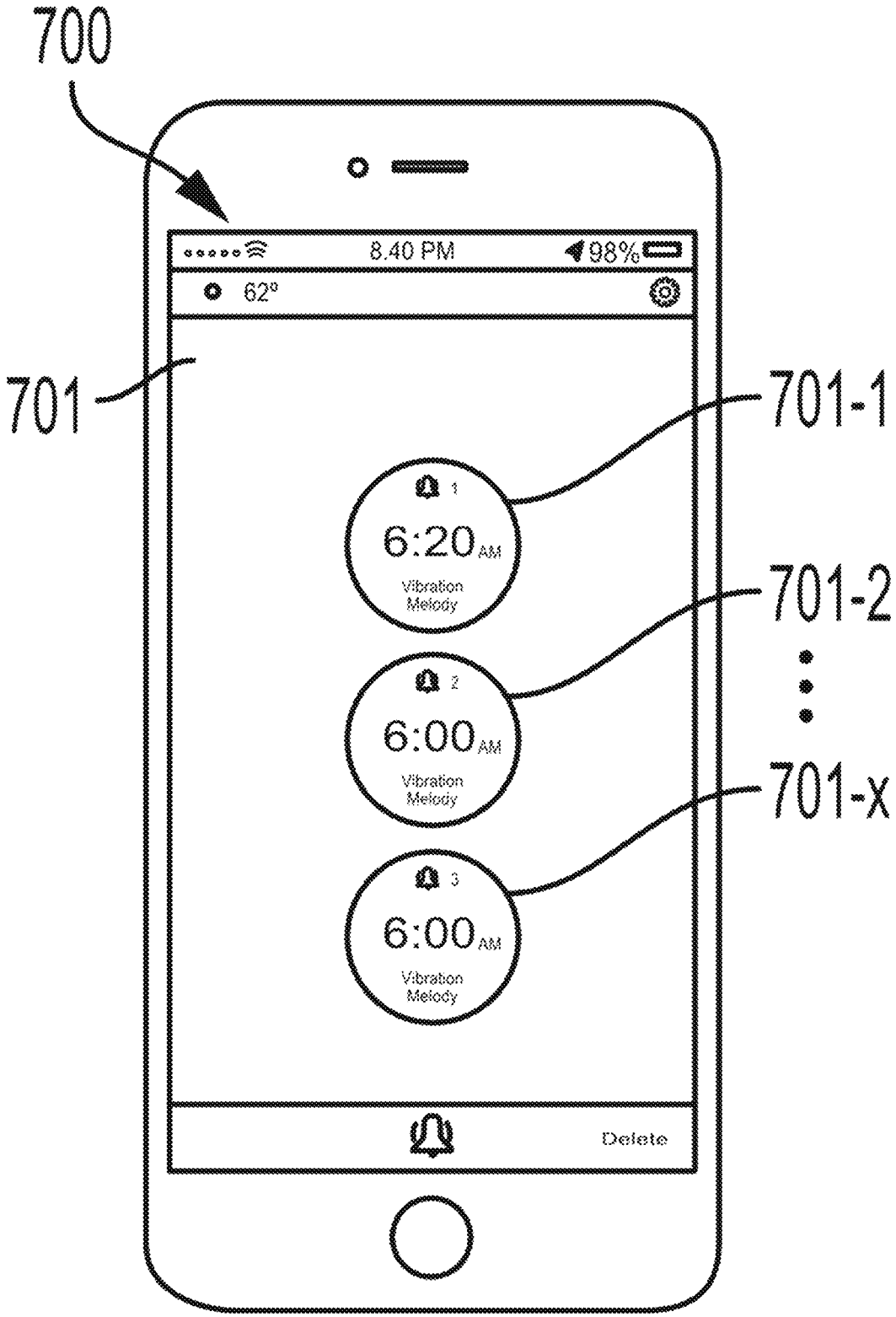

700
701
701-1
701-2
701-x
8:40 PM
98%
62°
1
6:20 AM
Vibration
Melody
2
6:00 AM
Vibration
Melody
3
6:00 AM
Vibration
Melody
Delete

FIG. 7

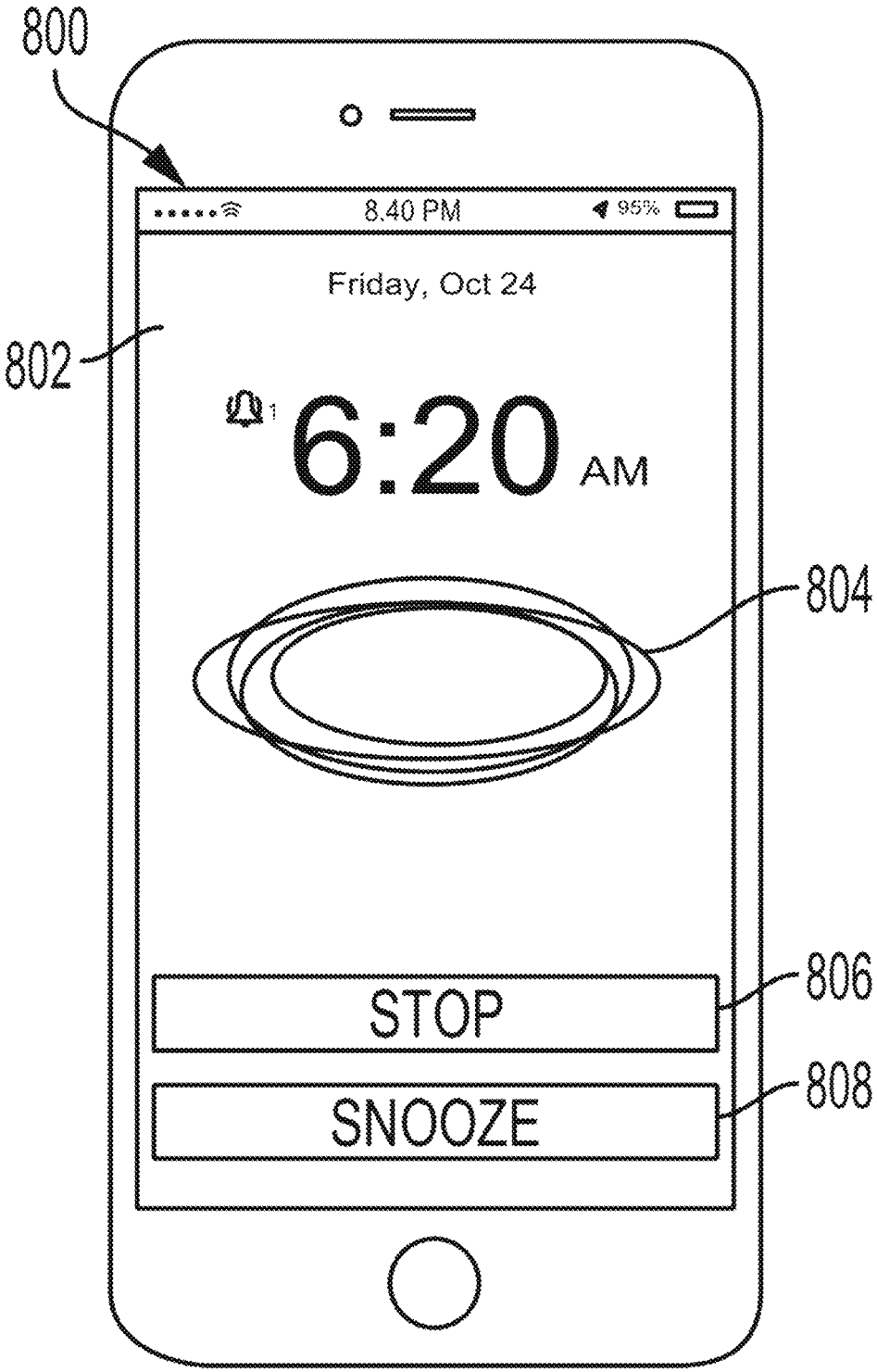


FIG. 8

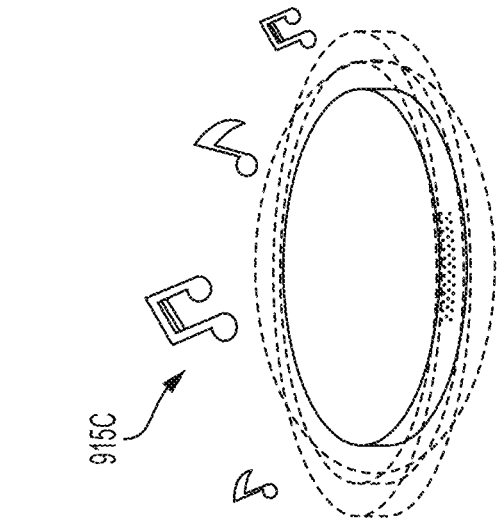


FIG. 9C

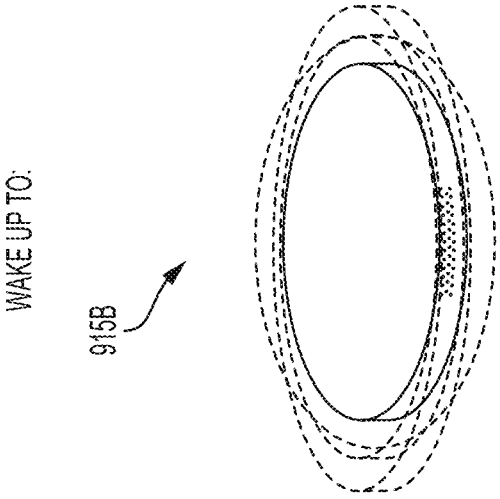


FIG. 9B

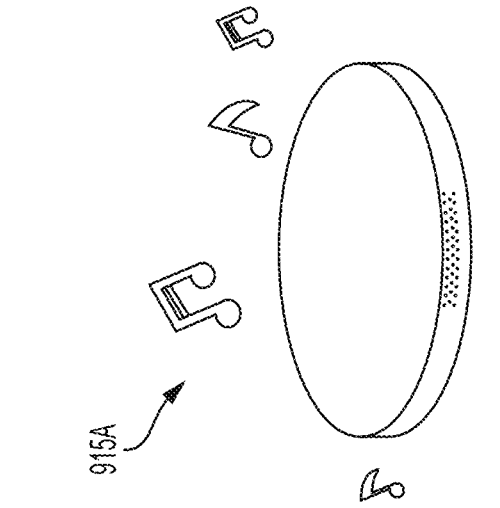


FIG. 9A

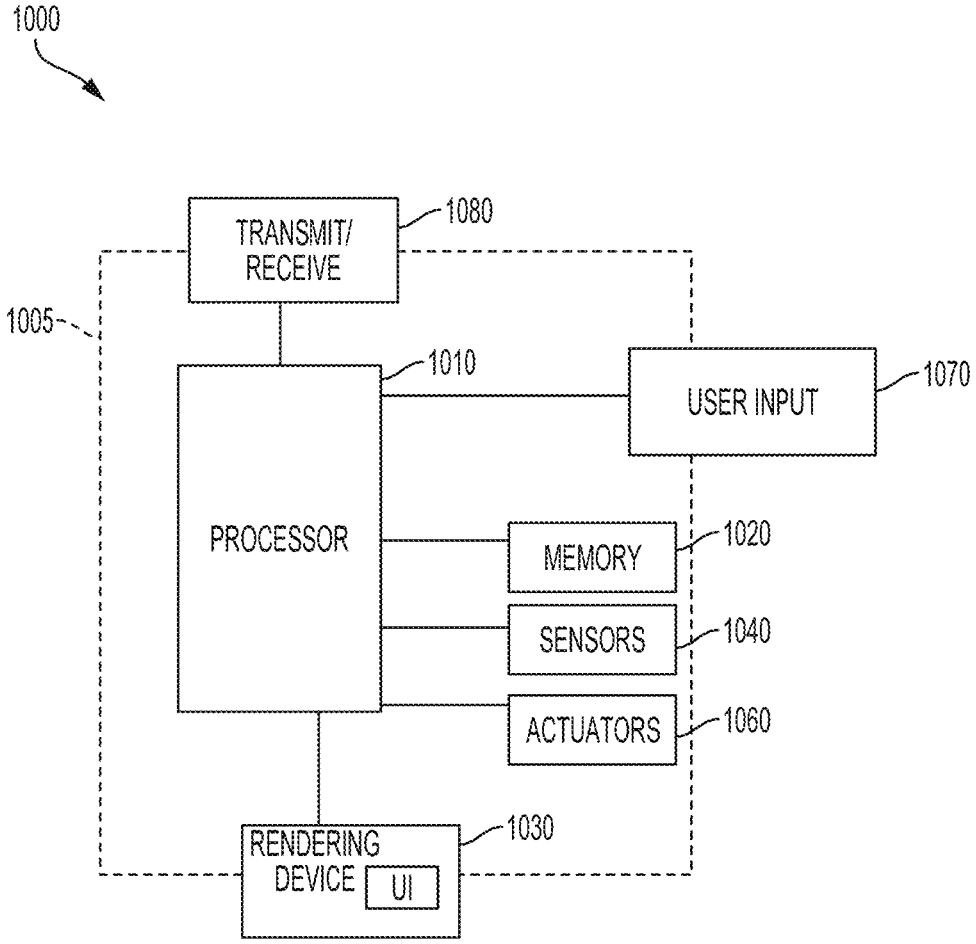

1000
TRANSMIT/
RECEIVE
1080
1005
1010
USER INPUT
1070
PROCESSOR
MEMORY
1020
SENSORS
1040
ACTUATORS
1060
RENDERING
DEVICE
UI
1030

FIG. 10

ALARM AND MONITORING SYSTEM AND METHOD OF OPERATION THEREOF

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation application of Ser. No. 16/167,911 filed on Oct. 23, 2018, which claims priority to continuation application of Ser. No. 14/937,797 (now U.S. Pat. No. 10,147,305) filed on Nov. 10, 2015, which claims priority to 62/078,460 filed on Nov. 12, 2014. The applications are incorporated herein by reference.

FIELD OF THE PRESENT SYSTEM

The present system relates to an alarm and monitoring system and, more particularly, to an alarm system with sound and/or vibrate mode and/or a monitoring system, which may be controlled by a primary device, such as a smartphone and/or other primary device, and a method of operation thereof.

BACKGROUND OF THE PRESENT SYSTEM

As smart phones become more pervasive, users rely upon an alarm function of the smart phone to generate an audible alarm. Unfortunately, audible alarms have a tendency of waking up more than their intended users. Accordingly, alarms which can vibrate to alert a user have become popular. However, current silent-type alarms must typically be worn by a user to be effective. For example, one common type of silent type alarm must be worn on a wrist of a user. Similarly, monitoring type systems, such as those that monitor sleep, blood pressure, pulse, blood gases, etc., must be worn, which may be of inconvenience to the user. Further, it has been difficult, if not, impossible to customize the prior alarm in accordance with user's settings. Accordingly, embodiments of the present system may overcome these and/or other disadvantages in prior systems.

SUMMARY OF THE PRESENT SYSTEM

The system(s), device(s), method(s), arrangements(s), user interface(s), computer program(s), processes, etc. (hereinafter each of which will be referred to as system, unless the context indicates otherwise), described herein address problems in prior art systems.

In accordance with embodiments of the present system, there is disclosed an alarm and monitoring system including a primary device and at least one secondary device, the alarm and monitoring system including at least one controller that determines whether at least one alarm event has occurred; establishes a wireless communication between a primary device and the secondary device, when it is determined that the alarm event has occurred; generates an alarm event signal including alarm information in accordance with the alarm event that is determined to have occurred; transmits the alarm event signal from the primary device to the secondary device; generates an alarm signal in accordance with at least the alarm information; renders the generated alarm signal on a rendering device of the secondary device. The controller generates the alarm event signal that causes the secondary device to render the generated alarm signal.

In accordance with embodiments of the present system, at least one controller may receive the transmitted alarm event signal at the secondary device which may generate the alarm signal. In operation, the at least one controller may determine capabilities of the secondary device and form the alarm event signal in accordance with the determined capabilities of the secondary device. When generating the alarm signal, the at least one controller may generate the alarm signal in accordance with a selected melody. The secondary device may control one or more other devices to generate the alarm signal. The one or more other devices may include auditory, visual and/or haptic rendering devices to generate the alarm signal.

In accordance with embodiments of the present system, there is disclosed a method of operating an alarm and monitoring system comprising a primary device and at least one secondary device, the method comprising acts performed by at least one controller of determining whether at least one alarm event is set; establishing a communication between a primary device and the secondary device when it is determined that the alarm event has been set; transmitting an alarm event signal including alarm information from the primary device to the secondary device in accordance with the alarm event that is determined to have been set; generating an alarm signal by the secondary device in accordance with at least the alarm information; and rendering the generated alarm signal on a rendering device. The act of establishing the communication may include an act of establishing a wireless communication between the primary and secondary devices. The method may include an act of generating the alarm signal at the secondary device.

In accordance with embodiments of the present system, the method may include an act of determining capabilities of the secondary device. The method may further include an act of forming the alarm event signal in accordance with the determined capabilities of the secondary device. The act of generating the alarm signal may include an act of determining whether communication is established between the primary and secondary devices. When it is determined that communication is established, the method may include an act of providing a user interface in accordance with the determined capabilities of the secondary device. The method may include one or more acts of generating the alarm signal in accordance with rendering information that is stored in a local memory, controlling one or more other devices to generate the alarm signal and the one or more other devices generating at least one of an auditory, visual and haptic alarm signal.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is explained in further detail in the following exemplary embodiments and with reference to the figures, where identical or similar elements may be partly indicated by the same or similar reference numerals, and the features of various exemplary embodiments being combinable. In the drawings:

FIG. **1**A shows a block diagram of a portion of an alarm and monitoring system in accordance with embodiments of the present system;

FIG. **1**B shows block diagram of a device operating in accordance with embodiments of the present system;

FIG. **2**A shows a partially cutaway top front perspective view illustration of a portion of a device in accordance with embodiments of the present system;

FIG. **2**B shows a bottom front perspective view of a portion of a device in accordance with embodiments of the present system;

FIG. **3**A shows a top planar view of a portion of a device in accordance with embodiments of the present system;

FIG. **3**B shows a bottom planar view of a portion of a device in accordance with embodiments of the present system;

FIG. **3**C shows a rear planar view of a portion of a device in accordance with embodiments of the present system;

FIG. **4** shows a partially exploded front perspective view of a device in accordance with embodiments of the present system;

FIG. **5** shows a functional flow diagram of a portion of a process performed in accordance with embodiments of the present system;

FIG. **6** shows a screen shot of portion of an alarm configuration graphical user interface (GUI) generated in accordance with embodiments of the present system;

FIG. **7** shows a screen shot of a portion of an alarm configuration GUI generated in accordance with embodiments of the present system;

FIG. **8** shows a screen shot of a portion of an alarm configuration GUI generated in accordance with embodiments of the present system;

FIG. **9**A shows a portion of a graphical representation that may be rendered in accordance with embodiments of the present system;

FIG. **9**B shows a portion of a graphical representation that may be rendered in accordance with embodiments of the present system;

FIG. **9**C shows a portion of a graphical representation that may be rendered in accordance with embodiments of the present system; and

FIG. **10** shows a portion of a system in accordance with embodiments of the present system.

DETAILED DESCRIPTION OF THE PRESENT SYSTEM

The following are descriptions of illustrative embodiments that when taken in conjunction with the following drawings will demonstrate the above noted features and advantages, as well as further ones. In the following description, for purposes of explanation rather than limitation, illustrative details are set forth such as architecture, interfaces, techniques, element attributes, etc. However, it will be apparent to those of ordinary skill in the art that other embodiments that depart from these details would still be understood to be within the scope of the appended claims. Moreover, for the purpose of clarity, detailed descriptions of well-known devices, circuits, tools, techniques, and methods are omitted so as not to obscure the description of the present system. It should be expressly understood that the drawings are included for illustrative purposes and do not represent the entire scope of the present system. In the accompanying drawings, like reference numbers in different drawings may designate similar elements.

The present system as described in more detail below may provide for a primary device that utilizes a user interface to enable setup and programming of a secondary device. In accordance with embodiments of the present system, the primary device may operate as a master device to the secondary device which in these embodiments operates as a slave device (e.g., master/slave relationship between devices). Other relationships between devices may be suitably utilized in accordance with embodiments of the present system and are intended to be encompassed by the simplified following discussion.

In operation the primary device may transfer alarm information to the secondary device that at an alarm time, may operate as an alarm device with sound and/or vibrate mode. Further, the secondary device may operate, such as using a wireless connection, to control other devices such as a haptic device (e.g., vibrating), light source (e.g., lamp turn on, gradually brighten and/or flashing) and/or speaker (e.g., render audio) for rendering the alarm. Further, the secondary device may operate to control other devices such as a haptic, visual, auditory, and/or environmental device such as a thermostat for example to respond to the alarm information such as to adjust an environment based on the alarm information (e.g., warm a room before a wake-up alarm is generated).

FIG. **1**A shows a block diagram of a portion of an alarm and monitoring system (hereinafter system for the sake of clarity) **100**A in accordance with embodiments of the present system. The system **100**A may include a device **102** (which may be referred to herein as a primary device) and one or more secondary devices illustratively shown as secondary devices **110**-**1** through **110**-P (generally secondary device **110**-*x*).

The primary device **102** and the secondary device **110**-*x* may communicate with each other over any suitable connection such as over the network **103** which may be accessed using wired and/or wireless communication links. For example, the primary device **102** and the secondary device **110**-*x* may communicate over a network **103** using any suitable wireless, at least in part, communication method or protocols such as WiFi™, Bluetooth™, Internet Protocol, or the like. In addition or in place of a network-based communication, in accordance with embodiments of the present system, a partial hardwired communication connection, such as a home wired network, a direct wired connection, such as through a direct cable connection, and/or a direct wireless communication, such as one or more connections **103**-*x*, such as Bluetooth™, etc., is also envisioned. The discussion of the network, such as the network **103** herein should be understood to include any one or more of the communication systems and/or others that may be suitably applied. For example, in accordance with an embodiment, the primary device may communicate with the secondary device over a Bluetooth™ connection while the secondary device communicates with another device (e.g., one or more other devices **140**-*x*) using a WiFi™ connection. As appreciated, the same or different connections may be made between various devices which may also vary over time (e.g., WiFi™ connection at one time and Bluetooth™ connection at another time).

Further, one or more of the secondary devices **110**-*x* may operate, such as using a wireless connection (e.g., network **103**), to control the one or more other devices **140**-*x*, such as a haptic device (e.g., vibrating), light device (e.g., lamp turn on, gradually brighten and/or flashing), speaker (e.g., render audio) and/or other device (e.g., a thermostat) for rendering the alarm information and/or otherwise responding. In accordance with embodiments of the present system, one or more of the rendering devices may be a portion of the secondary device such that the secondary device and/or the other device may respond to the alarm information.

In accordance with embodiments of the present system, the primary device **102** may include any suitable communication device such as smartphone (e.g., an IPhone™, etc.), laptop, tablet, etc., and may run one or more applications to provide functionality as described herein. However, it is also envisioned that the primary device **102** may include additional communication devices such as a dedicated alarm communication device and/or processor operating in accordance with embodiments of the present system.

With regard to the secondary device **110**-*x*, each of these devices may include a unique identification (ID) which may be used to identify and/or otherwise communicate with the corresponding secondary device **110**-*x*, as desired. With regard to the secondary devices **110**-*x*, one or more of these devices may for example be similar to and/or differ (e.g., provide a different form and/or function) from each other and/or from the illustrative discussion herein. However, for the sake of clarity, only a single secondary device **110** is generally illustratively discussed unless the context indicates otherwise.

FIG. **1**B shows block diagram **100**B of a secondary device **210** operating in accordance with embodiments of the present system. The secondary device **210** may, for example, be similar to the secondary device **110** and may include one or more of a controller **202**, a memory **204**, one or more rendering devices, such as a display **206**, a speaker (SPK) **212**, and/or a haptic device such as a vibrator **216**, a microphone (MIC) **214**, a transmit/receive (Tx/Rx) portion **218**, and/or one or more sensors **208**, one or more of which may communicate with each other and/or to the controller **202**. Power for the secondary device **210** may be provided by a power storage device **220** such as a battery. While each of the components of the secondary device **210** are separately depicted, it is envisioned that two or more of the components may also be integrated together. For example, the controller **202** may include a microprocessor and the transmit/receive (Tx/Rx) portion **218**. Further, one or more of the rendering devices, such as one or more of the display **206**, the speaker (SPK) **212**, and/or the haptic device **216** may also or in place of being enclosed with the secondary device **210**, be provided separate from the secondary device **210** yet be controlled (e.g., wirelessly) to operate as described herein such as one or more of the other devices **140**-*x* (e.g., haptic device, light device, speaker, thermostat, etc.) illustratively shown in FIG. **1**A. For example, the secondary device **210** may control other devices wirelessly, such as a heating/ventilation thermostat and/or other system to control the other system to respond (e.g., adjust heating/ventilation) to the alarm information as described herein. The controller **202** suitably configured may control the overall operation of the secondary device **210** and may include one or more logic devices such as switches, gates, micro-controllers, processors (e.g., micro-processors, etc.) and/or the like to process information in accordance with embodiments of the present system. The memory **204** may include any suitable memory such as local and/or distributed memory which may store application programs (e.g., Mobile Applications, etc.), user information (e.g., user settings, etc.), system settings, etc. The memory **204** may include a local and/or distributed memories, as desired. In accordance with embodiments of the present system, the memory **204** may store software such as applications which may configure the controller **202** to operate as a special purpose controller and/or processor in accordance with embodiments of the present system. In accordance with embodiments of the present system, the memory **204** may include non-transitory memory.

The Tx/Rx portion **218** may receive information from the controller **202** for transmission via any suitable wireless and/or wired system as described herein, via the antenna (ANT) and/or may receive information from any suitable wireless and/or wired system such as the antenna (ANT) and provide this information to the controller **202**. The Tx/Rx portion **218** may for example further up convert and/or down convert information as may be suitable for operation as configured. In accordance with embodiments of the present system, the Tx/Rx portion **218** may communicate via any suitable communication method such as via a wireless network, and/or other network as described. In accordance with embodiments of the present system, the Tx/Rx portion **218** may communicate for example using any suitable communication protocol and/or system such as via WiFi™ and/or Bluetooth™ systems.

The one or more rendering devices including one or more of a visual, auditory and/or haptic rendering device may be a portion of the secondary device **210** and/or may be housed in an enclosure separate from the secondary device **210**. In embodiments where there are one or more separate rendering devices, the controller **202** may communicate with the separate rendering devices for example utilizing the Tx/Rx portion **218**. The one or more rendering devices may operate to provide a user interface UI **206** that may include a display (DISP) (e.g., a touch-screen display) or the like which may render information such as a graphical user interface (GUI) for operation in accordance with embodiments of the present system. For example, the controller **202** may form a user interface (UI) such as a GUI and provide the GUI to the display for rendering in accordance with embodiments of the present system. Further, in accordance with embodiments of the present system the user interface (UI) **206** may provide illumination sources such as one or more light emitting diodes (LEDs) which may be lit individually and/or collectively (e.g., two or more) to indicate information for the convenience of the user. Operation of the rendering devices contained herein is understood to apply whether the rendering device is provided as a portion of the secondary device **210** or is enclosed separate from it.

In accordance with embodiments wherein the UI **206** includes an auditory portion, a speaker **212** may include one or more speakers which may render audio information, for example obtained from the controller **202**, the memory **204**, the Tx/Rx portion **218**, etc., for the user. For example, the speaker **212** may provide auditory information to a user, such as an auditory alarm, sounds to facilitate relaxation (nature sounds, music, etc.), sleep, etc., under control of the controller **202**. Similarly, the haptic device **216** may provide haptic information to a user, such as a haptic alarm, etc., under control of the controller **202**. Such haptic and/or auditory information may be pre-stored locally in the memory and/or may be transmitted to the device **210**-*x* in a suitable format prior to being rendered, such at the time of interaction with the primary device. In an embodiment wherein the haptic and/or auditory device are provided separate from the secondary device **210**, the secondary device **210** may control (e.g., using a Bluetooth™ communication link) the separate haptic and/or auditory device to activate at the time of an alarm.

In an embodiment wherein the haptic and/or auditory device is operated to notify, awaken, or otherwise alert the user, the haptic device and/or speaker may render related information at a fixed and/or ascending (e.g., periodically increasing) level as programmed and/or otherwise set, desired, etc. For example, in an embodiment wherein an ascending haptic and/or auditory level is produced, the haptic and/or auditory level may start at a first level for a period of time, which in an event wherein the user does not operate to stop rendering, the controller may operate periodically to increase the haptic and/or auditory level to higher levels until a maximum level is reached or the user operates to stop the rendering. Similarly, in an embodiment wherein a descending haptic and/or auditory level is produced, the haptic and/or auditory level may start at a first level for a period of time, which in an event wherein the user does not

operate to stop rendering, the controller may operate periodically to decrease the haptic and/or auditory level to lower levels until a minimum level is reached or the user operates to stop the rendering. In accordance with embodiments of the present system, the controller may operate through programming and/or construction to produce a fixed haptic and/or auditory level until the user operates to stop the rendering. The system may produce a corresponding haptic and/or auditory level for a period of time, at which time, the controller may operate to stop the rendering without user intervention.

In accordance with embodiments of the present system, the MIC **214** may acquire ambient sound and form corresponding audio information which may then be provided to the controller **202** for further processing. For example, the MIC **214** may detect ambient sounds such as sounds formed by a user (e.g., such as voice commands, sleeping sounds, etc.) and may correspondingly provide audio information to the controller **202** for storage, transmittal, and/or further processing. For example, the controller **202** after receipt may then further process this audio information and may transmit the audio information to the primary device (e.g., **100**, FIG. **1**A) for further processing. In accordance with embodiments of the present system, the controller **202** may store the audio in the memory **204** for later use, such as for later transmission, as desired, programmed, etc.

In accordance with embodiments of the present system, the MIC **214** may acquire sounds such as voice commands (requests), sleeping sounds, etc., from a user. The sounds may be received by the controller **202** which may store and/or transmit these sounds (e.g., voice commands) as raw and/or processed information to the primary device (e.g., **100**, FIG. **1**A) which may then process these sounds (e.g., using speech-to-text (STT) processing) for example to identify the sounds and take appropriate action. In accordance with embodiments of the present system, a user may, for example, provide a voice command, such as request a snooze operation of an alarm, answer a call, hang up on a call, create a text message, read or send a text message, etc. For example, the MIC **214** may acquire audio information which may for example be used by the controller **202** to initiate and/or terminate hands-free phone calls. In accordance with embodiments of the present system, the MIC **214** may be included as one of the sensors **208**. Further, the present system may provide a hands-free functionality for the user by the secondary device **210** operating with the primary device (e.g., primary device **102**) in accordance with embodiments of the present system. Further, the secondary device of the present system may acquire sleeping sounds for processing by or together with the primary device (e.g., primary device **102**) in accordance with embodiments of the present system for example to enable sleep analysis and/or sleep recommendations.

The one or more sensors **208** may include one or more sensors which may detect sound, light, touch, temperature, humidity, pressure, orientation, motion, and/or acceleration and form corresponding sensor information including temporal data related to the sensor information (e.g., periodic sensor information and a time of the periodic sensor information) for example, to enable sleep analysis as described herein. For example, temporal sensor information may be utilized to determine an environment (e.g., sound, light, temperature, humidity and ambient pressure) of a user during sleep as well as the user response (e.g., snoring, motion, etc.) to the environment.

Further, in accordance with embodiments of the present system, touch sensors may include hard and/or soft switches/sensors which may for example detect motion, touch, etc., and form corresponding sensor information. The motion and/or acceleration sensors may detect motion and/or acceleration in (or along) one or more axes and may form corresponding sensor information (e.g. acceleration information). For example, in accordance with embodiments of the present system one or more acceleration sensors may form acceleration information corresponding to one or more axis. In accordance with embodiments of the present system, a drop sensor may be provided to detect a fall and form corresponding information.

In accordance with embodiments of the present system, orientation sensors may detect an orientation of the secondary device **210** and form corresponding orientation information. For example, in accordance with embodiments of the present system, the orientation sensors may detect a right-side or upside down orientation of the secondary device **210** and form corresponding information. In embodiments, it is envisioned that the orientation sensor(s) may detect an orientation of the secondary device **210** relative to a fixed orientation such as magnetic north and form corresponding sensor information (e.g., orientation information). For example, the sensor(s) may collect information related to a user's sleep habits (e.g., sounds, motion, etc.) and form corresponding sensor information which may then be transmitted to the primary device (e.g., primary device **102**) for further processing by its controller, such as to provide recommendations to the user related to the sleep habits as described herein. For example, in embodiments wherein the secondary device **210** in positioned to monitor a user's sleep habits (e.g., positioned under a pillow and/or otherwise positioned, fastened, etc. with relation to a pillow, mattress, etc., of a user), the motion sensor(s) may collect (e.g., store) and/or transmit motion information to the primary device which may then be utilized to determine/track sleep quality using this information as discussed.

The haptic device **216** may include any suitable haptic device which may render haptic information. For example, in accordance with embodiments of the present system, the haptic device **216** may include any suitable vibrator (VIB) (e.g., a rotational or linear motor with an unbalanced mass) that may generate vibration which may be sensed by a user. The haptic device may be shaped, sized, and/or powered, etc., such that it may generate sufficient vibration to notify, wake, etc., a user even when placed, for example, under a pillow or the like. In accordance with embodiments of the present system, the VIB may be driven using a signal which may have a uniform, periodic (e.g., sinusoidal, etc.), and/or non-periodic drive signal so that, for example, the vibration may vary in accordance with the drive signal. The power device **220** may include any suitable power storage device which may store power such as a battery, a capacitor, and/or the like.

FIG. **2**A shows a partially cutaway top front perspective view illustration of a portion of a device **200**, such as a device **210**-*x* (e.g., illustratively a secondary device), in accordance with embodiments of the present system. As readily appreciated, the device may take other forms including a form that may be fastened to a pillow, mattress, etc., of a user, etc. Any of these suitable forms are encompassed by the description herein. As described, one or more of the components, such as the rendering devices may be provided separate from the secondary device **200**, yet still be operated as described herein. The secondary device **200** may for example be similar to the secondary device **110**, **210** and may include a formed body **260** for example having an upper housing **262**, a lower housing **264**, a middle housing **266**,

and/or an interface portion **276**. For example, the body **260** may define an interior cavity **261** and may contain one or more components in accordance with embodiments of the present system. The interface portion **276** may include one or more switches, connection ports for communicating with the secondary device **200**, and/or a rendering device, such as a display (e.g., one or more light-emitting diodes (LEDs)), etc. For example, in accordance with embodiments of the present system, the interface portion **276** may include one or more switches, buttons, etc., (e.g., a button **268**), such as a snooze button, a stop button (e.g., to stop rendering), a power switch **270**, a battery charging port **272**, and/or one or more MIC **274**. As readily appreciated, any one or more of the switches, buttons, etc., may perform one or more operations in accordance with embodiments of the present system. For example, in one mode a button may operate as a snooze button to temporarily stop the rendering of an alarm while in a separate mode, such as during the establishment of a communication link, the button may operate to initiate the communication link.

The switches such as the button **268** and/or the power switch **270** may be situated for example around a periphery of the housing **266** so as to be shielded from accidental activation. However, in yet other embodiments, it is envisioned that one or more of the buttons, switches, etc., may be located elsewhere such as on one or more of the upper and lower housing **262** and **264**, respectively. However, a cover such as a hinged cover, a locking mechanism, or other type of shielding (e.g., a wire protector) may be provided to shield one or more of the buttons, switches, etc., from accidental activation, intrusion, etc.

In accordance with embodiments of the present system, the button **268** and/or the power switch **270** may include any suitable switch type such as hard (e.g., pushbutton-type, slide-type, toggle-type) and/or soft (e.g., touch-sensitive-type, programmable, alterable display or indication of operation, etc.) switch of one or more types. For example, it is envisioned that the button **268** and/or the power switch **270** may be formed using one or more hard and/or soft type switches such as touch-sensitive-type switches. Further, in accordance with embodiments of the present system, a snooze and/or power operation may include one or more switches (e.g., a combination of switches actuated simultaneously and/or in sequence, such as press switch key **1** and key **2** together for snooze, etc.). In accordance with embodiments of the present system wherein more than one switch/sensor is utilized for an operation, this combination may be assigned by default, by the user by the system and/or otherwise programmed.

The power switch **270** may be for example hard-type switch such as a slide-type switch which may be activated (e.g., switched on) and/or deactivated (e.g., switched off) by sliding as illustrated by arrow **207**. When, the power switch **270** is placed in the "on" position, the secondary-device **200** may be turned on for operation in accordance with the present system. When, the power switch **270** is placed in the "off" position, the secondary-device **200** may be turned off or otherwise be placed in an inactive state, such as in a low-power or no power usage state.

In accordance with embodiments of the present system, the button **268** may include a press-type switch and may generate for example a snooze signal which may be transmitted to a primary-device (e.g., primary device **102**) for further processing. For example, depressing a snooze button may cause the primary device to suspend a rendering, such as an auditory alarm, for example for a period of time (e.g., 5 minutes, etc.). In accordance with embodiments of the present system, each time the button **268** is depressed, a controller of the system may extend (e.g., stack, add or otherwise extend a current delay time) and/or otherwise provide a delay time until the next alarm by a desired period of time such as 5 minutes, etc., as may be set by default, by the system, by a user and/or otherwise programmed.

The battery charging port **272** may include any suitable port for receiving a cable and/or device such as a universal-serial bus (USB)-type port or the like to provide power to the secondary device **200**. However, in accordance with embodiments of the present system, it is envisioned that other types of ports and/or a wireless charge port may be provided, for example to wirelessly provide power to charge a battery and/or otherwise provide power to the secondary device **200**. In accordance with embodiments of the present system, the port **272** may also operate as the transmit/receive (Tx/Rx) portion, such as the transmit/receive (Tx/Rx) portion **218**, for transmitting and/or receiving programming instructions, such as alarm settings, monitoring settings, melodies, etc., as described herein.

FIG. **2**B shows a bottom front perspective view of a portion of the secondary device **200** in accordance with embodiments of the present system. Caps **278** may be mounted within openings **280** that are configured to receive securing devices such as screws. The caps **278** may fit flush or may extend slightly past an exterior periphery of the lower housing **264** so as to act as mounting pads or cushions.

FIG. **3**A shows a top planar view of a portion of the secondary device **200** in accordance with embodiments of the present system. As previously discussed, the body **260** may have any desired shape such as a round shape, ovoid, and/or partial ovoid. However, in accordance with embodiments of the present system other shapes are also envisioned as described herein. The upper housing **262** may have an outer peripheral rim **263** which extends slightly past an outer periphery of the middle housing **266** to protect for example the interface **276** or portions thereof such as switches from unintended activation such as due to accidental contact. Accordingly, the outer peripheral rim **263** may protect the interface **276** and portions thereof from for example accidental impact if, for example, the secondary device **200** is dropped unto a hard surface (e.g., a desktop, a floor, etc.) or is placed under a pillow.

FIG. **3**B shows a bottom planar view of a portion of the secondary device **200** in accordance with embodiments of the present system. The lower housing **264** may have an outer peripheral rim **265** which extends slightly past an outer periphery of the middle housing **266** for example to protect the interface **276** from unintended contact. The outer peripheries **263** and **265** of the upper and lower housings **2652** and **264**, respectively, may be the same as (e.g., in shape and/or size) or different from each other and may cooperate as described herein.

FIG. **3**C shows a rear planar view of a portion of the secondary device **200** in accordance with embodiments of the present system. The middle housing **268** may include patterns and/or vents **282** to promote ventilation (e.g., cooling) and/or allow exiting of for example audio emissions (e.g., generated by a rendering by the speaker such as the SPK **212**) from an interior cavity of the secondary device **200**.

FIG. **4** shows a partially exploded front perspective view of a device **400** in accordance with embodiments of the present system. As discussed, the device may operate as a secondary device that may for example be similar to the secondary device **200** and may include a body **460** which is illustratively shown as similar to the body **260**. The body

460 may enclose one or more of the components of the present system, such as the rendering devices however, as described, one or more of these components may also or alternatively be enclosed separate from the body **460**. Accordingly, similar numerical designations may be used to designate the same or similar portions. However, it should be understood that these portions may, in accordance with embodiments of the present system, differ from those of the secondary device **200**.

As discussed, the button **268** may operate as a snooze button and may be a hard-type switch including a cover portion **269** and one or more actuators such as press-type switches **267-1** and **267**-N (generally **267**-*x*) thus forming a combination switch which may be pressed singularly for corresponding functions and/or may be pressed in unison (e.g., two or more switches being depressed simultaneously and/or in sequence) for another function. For example, these functions and/or actuations may be assigned by default, by the system, by a user and/or may be otherwise programmed. The power switch **270** may include a cover **271** coupled thereto and with which a user may interact to move (e.g., by sliding, etc.) the power switch **270** to on or off positions.

An interface board **284** may be situated within the cavity **261** of the body **260** and may be coupled to and/or may couple together one or more of the snooze button **268**, the power switch **270**, the battery charging port **272**, and the MIC **274**. The middle housing **266** may include one or more openings through which one or more of the snooze button **268**, the power switch **270**, the battery charging port **272**, and the MIC **274** may pass and/or be accessed. The speaker **238** and/or the vibrator **246** may be situated adjacent to the upper housing **262** and/or may be housed separate from the body **460** as described. A coupler such as screws **279** (or other suitable coupling method such as welding, friction fitting, etc.) may couple the upper housing **262** to the lower housing **264** so as to sandwich the middle housing **266** therebetween. Accordingly, the screws **279** may pass through openings **280** which are situated within the lower housing **264**. Caps **278** may then be frictionally fit within at least a portion of the openings **280** so as to conceal the screws **279**. The power storage device **220** may include any suitable power storage device which may provide power such as a rechargeable battery and/or a capacitor and may receive a charge for example from the battery charging port **272**.

FIG. **5** shows a functional flow diagram of a portion of a process **500** performed in accordance with embodiments of the present system. The process **500** may be performed using one or more computers communicating over a network and may obtain information from, and/or store information to one or more memories which may be local and/or remote from each other. The process **500** may include one of more of the following acts. In embodiments of the present system, the acts of process **500** may be performed using one or more alarm systems operating in accordance with embodiments of the present system. Further, one or more of these acts may be combined and/or separated into sub-acts, if desired. Further, one or more of these acts may be skipped depending upon for example settings, embodiments, etc. In operation, the process may start during act **501** and then proceed to act **503**.

During act **503**, the user may for example download a corresponding application to a primary device, such as a smartphone. In accordance with embodiments of the present system, the Application may include programming portions that configure the primary device for operation as described herein such as by providing a user interface as described. Thereafter, the primary may attempt to form a communication link with the secondary device during act **509** to enable further operation. For example, in a case wherein a Bluetooth™ communication link is utilized, turning on the secondary device may cause the secondary device to be discoverable on the smartphone. Thereafter the primary and secondary devices may attempt to communicate together (e.g., may attempt pairing by a Bluetooth™ communication link) during act **511** over any suitable connection and/or method. For example, in accordance with embodiments of the present system, a Bluetooth™ connection may be established (e.g., pairing) between the primary device and the selected secondary device. In accordance with embodiments of the present system, a user may select a preferred type of communication method (e.g., WiFi™, Bluetooth™, ZigBee™, proprietary, RFID, etc.) for communication when more than one system of communication is available between the devices. In accordance with embodiments of the present system, other operations may be utilized for initiating the communication link such as depressing a button on the secondary device to initiate a communication link with the primary device.

In an embodiment wherein one or more secondary devices are available, a communication link may be attempted between the primary device and the one or more available secondary devices. In accordance with embodiments of the present system, each device (e.g., primary and/or secondary devices) may have a unique identification (ID) (e.g., a unique identification). Thus, in accordance with embodiments of the present system, for example each secondary device may be assigned a unique number from 1 to P in a case wherein more than one secondary device is available. However, to simplify the discussion, only a primary and single secondary device (e.g., p=1) is discussed, for example having an ID of ID=1 for the sake of clarity.

After the communication link is confirmed between the primary device and the secondary device during act **511**, the user may open the application to enable operation in accordance with the present system. For example, the application may be utilized to set the device (e.g., a secondary device **110**-*x*) to operate in accordance with the present system as well as depicting on the primary device an operating state (e.g., communication link status such as connected, battery status, operating mode such as alarm, sleep monitoring, etc.) of the secondary device. In a case wherein the communication link is not confirmed, the process may continue to attempt communication (e.g., repeat act **509**) until a communication link is established during act **509** and/or may return to act **503** for further configuration operations.

In a case wherein the communication link is established, the application on the primary device may be utilized for sending control information to the secondary device during act **513** such as to set an operating mode of the secondary device. In accordance with embodiments of the present system, the control information may include alarm information (e.g., date, time, alarm type, rendering device, etc.), operating mode information (e.g., sleep monitoring), rendering information, etc. For example, the process may configure alarm settings and/or alarm times (e.g., by date, day, time, etc.) for one or more alarm events. In operation, a user may set an alarm within the application on the primary device for a time (e.g., every Tuesday, this Tuesday, etc.) for a given alarm event and transmit this information to a memory of the system, such as within the secondary device, as alarm information during act **513** for later use (e.g., "later" as in at the time of a given alarm) by the secondary device. In this way, there is no need for the primary and

secondary devices to have an operable communication link at the time when a given operating mode is intended (e.g., see act **519**) such as at a given alarm time for the secondary device to produce the given alarm and/or to control external devices (e.g., other devices, such as a light, speaker, haptic device, thermostat, coffee maker, etc.) to perform an operation at the given alarm time and/or at a time related to the alarm time. For example, in accordance with embodiments of the present system, the secondary device may communicate with another device, such as a lamp, to increase a light brightness for example in intervals producing an increasing amount of light leading up to the alarm time. In other embodiments, the lamp may go from off to full brightness as desired. Further, at the alarm time one or more rendering devices (as a portion of the secondary device and/or separate from it) may for example vibrate and/or produce an auditory rendering.

The setup routine of the application may provide a user with a suitable interface such as a graphical user interface (GUI) with which a user may interact in accordance with the present system, such as for example to configure one or more of the primary and secondary devices. For example, the GUI may be utilized to set the alarm settings such as one or more alarm times for one or more corresponding alarm events. For example, FIG. **6** shows a screen shot **600** of a portion of an alarm configuration GUI **601** generated in accordance with embodiments of the present system. The GUI **601** may be rendered on any suitable device **691** such as a smart phone (e.g., an iPhone™ is illustratively shown), laptop, tablet and/or other device and the like. In accordance with embodiments of the present system, the GUI may be provided by an application, such as an app running on the device **691**.

Referring to FIG. **6**, the GUI **601** may include day/date information **603** that a user may select to set the day and/or date of a given alarm event (e.g., 3 P.M. on Monday, Wednesday and Friday, October 25, etc.). The GUI **601** may include a plurality of menu-items with which a user may select set and/or reset one or more alarm events. For example, a user may select the day/date information **603** (e.g., by selecting the day/date information **603** menu item) and the process upon determining that the user has selected day/date information may generate a text entry box and/or a calendar with which a user may enter information related to a selected day/date/year for a current alarm event. The current alarm event may be switched on or off using an alarm on/off icon **605** which may indicate whether the alarm is set to be activated (e.g., as illustrated by an "on" icon) or not activated (e.g., as may be illustrated by an "off" icon for example in place of the "on" icon) at the current alarm event time. For example, an "on" symbol may indicate that that the current event is an active event (e.g., in which an alarm signal is to be generated) while an "off" signal indicates that the current event is not an active event (e.g., is an inactive event in which an alarm signal will not be generated).

Alarm time information **607** may indicate a time at which current given indicated alarm event is to occur (e.g., an alarm time/date/condition setting). Alarm rendering information **621** may indicate whether vibration and/or sound modes (e.g., as represented by vibration and sound modes menu items **613** and **609**, respectively) are to be used for rendering an alarm of the current alarm event as well as indicating desired rendering information (e.g., visual, auditory and/or haptic) and/or related devices (e.g., internal and/or external devices rendering devices), such as a desired melody for an auditory alarm to be produced by a given rendering device in an embodiment wherein different auditory information and/or devices are selectable. A user may tap on visual, vibration and/or sound modes menu items, such as vibration and/or sound modes menu items **613** and **609**, respectively, to toggle the mode on or off (e.g., bright=on, dim=off) as may be desired.

A selected melody (e.g., a sound file for rendering) for a sound mode may be illustrated using by a melody menu item **611** (e.g., Melody 1, 2, 3, . . . m−1, M, etc.). In accordance with embodiments of the present system, there may be one or more selected melodies (e.g., M, where M is an integer) which may be stored for example as prerecorded and/or otherwise generated sound files (e.g., default memories stored prior to delivery of the secondary device to the user) in a memory of the system such as a memory of the primary and/or secondary device. Accordingly, a user may not have to load rendering information, such as melodies as separate files. For example, in accordance with embodiments of the present system, a user may select melodies from a stored plurality of melodies available on the secondary device thus simplifying a method of setting alarms. The rendering information such as melodies may be identified by name (e.g., melody 1, melody 2, etc.), genre (e.g., Rock, Classical, etc.), and/or by description (e.g., for a melody, by title, author, singer, band, etc.). In accordance with embodiments of the present system, the melodies may include songs, repeating patterns (e.g., in pitch and/or tone), white noise, etc. In accordance with embodiments of the present system, the melodies may also be utilized for operating the haptic device so that in effect, the melody may in place of or in addition to being utilized for auditory rendering, may be utilized for generating haptic rendering, such as following a baseline of a selected melody.00

It is further envisioned that the primary device and the secondary device may communicate with each other, for example, to identify melodies stored in a memory of the secondary device. During this communication, the primary device and the secondary device may synchronize with each other so that information such as sound files of the secondary device may be discovered by the primary device. Similarly, files of the primary device such as sound files may be transmitted to the secondary device. Further, the secondary device may communicate with one or more external devices (e.g., other devices) for example to determine the rendering capabilities of the one or more external devices (e.g., auditory, haptic, etc.).

In accordance with embodiments of the present system, the secondary device may include melodies such as from a given genre which may be pre-programmed at the factory. Thus, a Rock-type secondary device may include rock-type melodies while a Classical-type secondary device may include classical-type melodies. A user may then select a secondary device based upon the type of music desired for the alarm. Graphics and/or color of a secondary device may be customized so as to identify a type of secondary device. In accordance with embodiments of the present system, the user may load and/or otherwise alter previously stored files such as the sound files (e.g., melodies) into the primary device and/or the secondary device.

Referring back to FIG. **6**, a user may select a rendering mode/menu item, such as the melody menu item **611** (e.g., by swiping through an open or closed (e.g., a last melody of the list connects to a first item of the list) of available melodies, etc. The system may display a plurality of available melodies (e.g., sound files) which a user may select to associate with the current alarm event. Then, the system may set this user-selected melody (e.g., sound file) as a selected melody as may be represented by menu item **611** (e.g.,

"MELODY **1**"). Thus, in a case wherein the user selects MELODY **5**, the system may set this melody as the selected melody. In a case wherein the sound mode is selected (e.g., see, sound modes menu item **609**), the secondary device may transfer the sound mode such as an alarm event to the secondary device for subsequent rendering of the selected melody (e.g., audibly and/or haptically, see act **519** discussed further herein) when the corresponding alarm event is triggered for example at a set alarm time and/or date. An alarm event number **619** may indicate a number (e.g., in consecutive order) of a current alarm event (e.g., "1" next to the alarm bell). In accordance with embodiments of the present system, there may be a plurality (e.g., X) of alarm events as discussed.

For example, FIG. **7** shows a screen shot **700** of a portion of an alarm configuration GUI **701** generated in accordance with embodiments of the present system. Assuming that there are X current alarm events (where X is an integer), each of these X current alarm events may be represented by an alarm event window **701-1** through **701**-X (generally **701**-*x*) as shown. A user may select any of these alarm event windows **701**-*x* (e.g., by swiping, double clicking, etc., as may be set by default, by the user and/or by the system) and the system may then display more detailed information about the selected alarm event and/or may provide a user with an interface with which the use may interact to change settings of the corresponding alarm event. Thus, in a case wherein X=3, the three alarm event windows **701-1**, **701-2**, and **701**-X may be rendered by the process for the convenience of the user. Further, each alarm event may have a predetermined alarm duration value associated with it (e.g., see, alarm duration **625**, shown in FIG. **6** which in the illustrative embodiment is set to 2 min). This value may be set by default, by the system and/or by a user and may correspond to a total alarm rendering time as discussed herein.

Referring back to FIG. **6**, the process may generate a volume menu item such as a volume slider **617** with which a user may interact to view and/or set/reset a volume of the corresponding selected melody (e.g., see **611** MELODY **1** in FIG. **6**). Accordingly, a user may slide the volume slider **617** to set a volume of the selected melody to be associated with the current alarm event. Similarly, a haptic menu item such as a vibration slider may be generated so that a user may select a haptic force, frequency and/or pattern (e.g., vibrate, stop, vibrate, stop, etc.) to associate with a corresponding vibration mode to associate with the current alarm event (e.g., be haptically rendered by the current alarm event). Similarly, a visual (e.g., lighting) menu item may be generated so that a user may select a brightness levels, frequency and/or pattern (e.g., turn on brightness, start dim and brighten in intervals, etc.) to associate with a corresponding alarm event. In accordance with embodiments of the present system, a single slider, such as the slider **617** may be utilized to set two or more of a volume, a haptic force and a brightness associated (e.g., rendered) with a given melody and/or alarm event.

A weekday menu item **615** may indicate a day of week selected for a current alarm (e.g., 7 day alarm). For example, in a case wherein a user would like the current alarm event to be generated each week on the same day and/or time (e.g., every Friday at 6:20 A.M.), a user may select one of the days in the weekday menu item **615** so as to associate the selected day of the week with the current alarm event. In accordance with embodiments of the present system, a device ID **623** may identify a device associated with the current alarm event. Thus, in a case wherein a device by ID **1** is identified with the current alarm event, when the current alarm event is determined to occur (e.g., at its alarm time, date, etc.), the alarm may be rendered using a device whose identification is ID **1**. The process may then store these alarm settings as alarm information in a memory of the system such as a memory of the primary device and/or secondary device.

In accordance with embodiments of the present system, the primary device and the one or more secondary devices may be coupled (e.g., through a network, etc.) to determine capabilities of the one or more secondary devices and/or to transmit information, such as alarm information, therebetween. For example, in accordance with embodiments of the present system some secondary devices may include sensors, switches, ports, etc., of different types than other secondary devices. For example, some secondary devices may include motion sensors (e.g., acceleration sensors, gravity sensors, etc.) while other secondary devices may not and/or may include one or more other sensors. Thus, the capabilities of secondary devices may differ as desired. For example, a basic secondary device may be provided that has less features and/or programmable capabilities than a higher end (e.g., more expensive) secondary device. Accordingly, a primary device may query a given secondary device to identify the capabilities of the given secondary device. Then, the primary device may take into account the capabilities of the secondary device to form settings, menus, GUIs, etc., which may correspond with the capabilities of a specific secondary device. Thus, for example, a given secondary device may include a temperature sensor. Accordingly, the primary device may detect this capability, acquire stored and/or current temperature information from the temperature sensor and provide a suitable interface (e.g., GUI) for this secondary device, such as provide a display of temperature information, enable operating modes, etc., for the convenience of a user. Similarly, a secondary device may include capabilities to operate as a remote speaker phone (e.g., microphone and/or speaker) in concert which a phone application of the primary device. Accordingly, in these embodiments, the primary device may be operative to control the secondary device to act as a speaker phone and/or otherwise provide a GUI for use, setting, etc., of this capability. As may be readily appreciated, in a case wherein a secondary device does not have a given capability, the present system may adapt the provided GUI to delete and/or otherwise indicate that a given capability is not supported by a given secondary device. In accordance with embodiments of the present system, portions of the operating mode such as alarm information may be transmitted to one or more memories (e.g., a memory present on the secondary device) for storage.

Referring back to FIG. **5**, after completing act **513**, the secondary device may receive the information sent by the primary device during act **517**. As discussed, during act **517**, the secondary device may receive the control information from the primary device and process this signal to extract the control information, such as alarm information contained therein. The extracted control information may include information which indicates whether to, for example, turn on or off a current alarm, whether to enable or disable sound (e.g., turn sound on or off, respectively), whether to turn a vibrator on or off, whether to play a sound file (e.g., a sound file that is identified by the sound file ID and which may be stored in a memory of the secondary device), whether to control an external device at the time of an alarm, and/or otherwise set an operating mode of the secondary device as discussed herein After completing act **517**, the process may continue to act **518**.

During act **518**, the secondary device may process the control information such as form an alarm signal based upon alarm information extracted from the control information. Accordingly, the secondary device may analyze the extracted alarm information and use this information to determine for example a response when rendering an alarm (e.g., see act **519**). In accordance with embodiments, a secondary device may have available locally (e.g., in a memory such as the memory **1020** illustratively shown in FIG. **10**) responses that are available to the secondary device (e.g., haptic, visual, auditory, etc.), though in accordance with embodiments of the present system, further responses may also be received for example as a portion of the alarm information. Based upon these determinations, the process may form the alarm signal at the secondary device. The alarm signal may include one or more continuous and/or discrete signals (e.g., stored, received, etc.) and may be transmitted to one or more corresponding rendering devices of the secondary device and/or separate from the secondary device which are determined to be operative or otherwise available (e.g., for a separate rendering device) when rendering the alarm. For example, in a case wherein it is determined to play a melody (e.g., stored and/or received such as from the primary device), the alarm signal may include this melody and, as such, may include audio information which may be transmitted to a rendering device such as a speaker when rendering the alarm. Further, the secondary device may determine that an external speaker is available, such as through a Bluetooth™ communication link and the audio information may be transmitted also or alternatively to the external speaker for rendering the alarm.

With regard to the haptic rendering device, such as a vibrator, in a case wherein it is determined to operate a vibrator, the alarm signal may include a signal which may cause the vibrator to operate when rendering the alarm. Accordingly, the alarm signal may include a signal to switch the vibrator on (e.g., toggle on) and/or may include a signal to drive the vibrator such that, after the end of the signal is rendered, the vibrator stops operating. In accordance with embodiments of the present system, this signal may be transmitted to the vibrator and may include a discrete signal (e.g., to toggle the vibrator on or off) or a constant signal (e.g., to drive the vibrator) when rendering the alarm.

Thus, in accordance with embodiments of the present system, the process may form one or more alarm signals configured to drive one or more rendering devices in accordance with the extracted alarm information. For example, in a case wherein the extracted alarm information requires vibration to be output but no melody to be played, the process may form an alarm signal to drive an internal vibrator of the secondary device and/or an external vibrator when rendering the alarm. During this act, in a case wherein a melody (e.g., sound file) is to be played during an alarm event, the process may obtain the corresponding sound file from a memory of the system such as a memory of the secondary device and may generate a corresponding alarm signal for example to drive the speaker. In this way, the melody may be rendered by the speaker. In accordance with embodiments of the present system, the sound file may be maintained locally. In this way, the process may for example conserve system resources by not having to stream the sound file from the primary device. After completing act **518**, the process may continue to act **519**.

During act **519**, the secondary device may operate to set an operating mode such as to render the alarm signal at the time of a set alarm. Accordingly, the alarm signal may be provided to one or more rendering devices which may then render the alarm signal. During this act, the process may also start an alarm interval counter which may count a total time that the current alarm signal is being rendered by the secondary device and/or one or more other rendering devices.

In accordance with embodiments of the present system, when the secondary device is programmed to perform in accordance with an operating mode, one or more of the primary and secondary device may also communicate with one or more further devices (e.g., other devices) to control operation of the one or more other devices. For example, in a case wherein the secondary device is programmed to facilitate sleep of the user, such as by rendering a descending audio output, the secondary device may communicate with another device, such as a thermostat over a wireless coupling (e.g., Bluetooth™), to reduce a heat setting of the thermostat while controlling the internal and/or external rendering device. Similarly, in a case wherein the secondary device is programmed to facilitate waking of the user, such as by controlling a rendering device to render an ascending audio output, the secondary device may communicate with the other device at that time or some predetermined time before, to increase a heat setting of the thermostat, light setting of a lamp, etc. As readily appreciated, while external devices (e.g., one or more other devices) such as rendering devices, a thermostat, etc., are illustratively described as other devices, additional devices and device types may be suitably controlled.

In accordance with embodiments of the present system, the secondary device may attempt communication with the primary device at the alarm time. For example, at the alarm time the secondary device may though need not attempt to communicate with the primary device (e.g., such as over a Bluetooth™ connection) to determine whether the primary device is available. In accordance with embodiments of the present system, when the primary device is available (e.g., active, in a sleep state, etc.), the user interface may be produced on the primary device to facilitate operation, such as to control the alarm rendered during act **519** (e.g., see act **523** described below). As envisioned, whether or not the primary device is available when the alarm is rendered, stopped, etc., the secondary device will operate as described. After completing act **519**, the process may continue to act **521**.

During act **521** the process may determine whether an off and/or other control signal is generated. In accordance with embodiments of the present system, the off and/or other control signal may be generated at the secondary device directly, such as through operation of one or more of the buttons, switches, etc., present on the secondary device. In addition, the off and/or other control signal may be generated at the primary device (e.g., through operation of the application interface, such as the user interface provided by the application on the primary device) and be transmitted to the secondary device to directly control the secondary device when a communication link is present between the primary and secondary devices. For example, when an alarm event occurs on the secondary device, it may automatically search for a corresponding primary device, such as a smartphone. In a case wherein a corresponding smartphone for example is found, the secondary device may for example pair with the smartphone, bring up the corresponding user interface (e.g., application), etc., so that the operation of the secondary device may be controlled from the smartphone without requiring further intervention from the user (e.g., without requiring a manual pairing operation by the user). In this way, control of the secondary device may be performed

directly on the primary device at the alarm time for example to make it easier to snooze/turn off the secondary device via the smartphone user interface. Accordingly, in a case wherein it is determined that the off and/or other control signal is generated, the process may continue to act **523** where it may respond accordingly. For example, the smartphone may be utilized to turn off the alarm by, for example, sending control information to the secondary device to terminate the alarm signal provided to the rendering device and/or other devices. Thereafter, the process may end during act **573**.

However, in a case wherein it is determined that the off signal is not generated, the process may continue to act **525**. During act **525**, the process may determine whether a snooze signal is generated (e.g., in a case wherein a snooze switch is actuated) on the primary and/or secondary device as similarly described regarding the off signal. Accordingly, in a case wherein it is determined that a snooze signal is generated, the process may continue to act **527**. However, in a case wherein it is determined that a snooze signal is not generated, the process may continue act **521** for example until an end alarm time interval is reached, an off switch is actuated or until a snooze button is actuated. For example, the alarm interval may be determined to elapse when an alarm interval counter has a value which is greater than or equal to a predetermined alarm duration value. The alarm duration value may be set to a value by default, by the system and/or by a user to represent a maximum alarm duration such as 120 seconds, etc. The alarm interval may be determined not to have elapsed when the alarm interval counter has a value which is less than the predetermined alarm duration value.

During act **527**, the process may perform a snooze process using any suitable system. For example, the process may temporarily interrupt the current alarm (e.g., by interrupting the alarm signal) for a snooze period of time (e.g., 5 minutes, etc., as may be determined by default, by the system and/or by a user). Accordingly, the process may start a timer to determine when the snooze period of time elapses and may then resume the rendering of the alarm signal as before snoozing (e.g., see act **519**). Further, it is envisioned that the process may suspend the alarm interval timer during the snooze period so that the alarm interval timer stops during the snooze period and starts (from the same count) when the snooze period of time elapses. After completing act **527**, the process may repeat act **521**. Accordingly, in a case wherein another command (e.g., snooze or off for one or more rendering devices) is received while already snoozing, the process may reset the snooze (e.g., start a new snooze interval) or turn off the one or more rendering devices as appropriate.

In accordance with embodiments of the present system, the snooze signal may be generated by selecting (e.g., by depressing, etc.) a snooze key (e.g., a snooze button, a user interface item, etc.) on the secondary device and/or on the primary device as described. Selection of the snooze key may generate a signal to inform the secondary device of the selection by, for example, transmitting the signal that the snooze key was selected to the secondary device. The secondary device in receipt of this signal may then take appropriate action. For example, the secondary device may temporarily interrupt the current alarm (as described above) for a threshold period of time as described above with respect to act **525**. Similarly, the primary device when in communication with the secondary device during the alarm event may update a status of the corresponding alarm event, for example to indicate on the user interface that the secondary device was instructed to snooze and may render this updated status on a rendering device of the system, as desired. Accordingly, when a user selects (e.g., by depressing) a snooze button on the secondary device, the primary device may be informed of this and may render information indicating such (e.g., 5 min snooze on).

With regard to acts **519** and **523**, the snooze and off buttons may be situated on the secondary device and/or primary device as described. For example, with regard to the primary device that is in communication with the secondary device when an alarm event occurs, the process may generate a GUI to indicate to a user a current status of the alarm event and on/off/snooze keys (e.g., user interface objects such as a display of selectable buttons provided on the UI) for a user to select. For example, FIG. **8** shows a screen shot **800** of a portion of an alarm configuration GUI **801** generated for example on a primary device in accordance with embodiments of the present system. A graphical representation **804** may illustrate a current status of the secondary device (e.g., vibrating). One or more menu items such as Stop and Snooze menu items, **806** and **808**, respectively, may include menu-items generated in accordance with embodiments of the present system. The graphical representation **804** may be based upon the alarm information.

For example, FIG. **9**A, FIG. **9**B and FIG. **9**C each show a portion of graphical representations **915**A through **915**C, respectively, that may be rendered in accordance with embodiments of the present system. For example, in a case wherein the alarm information is set for rendering an audible melody only, a melody only graphical representation as shown in FIG. **9**A may be rendered on a primary device. Similarly, in a case wherein the alarm information is set to vibration only, a vibration only graphical representation of FIG. **9**B may be rendered. Lastly, in a case wherein the alarm information is set to vibration and melody, a vibration and melody graphical representation may be rendered as shown in FIG. **9**C. These representations may represent a current state of an alarm which is currently occurring on the secondary device and may be updated in real time and/or may represent a future state of a given alarm.

With regard to the snooze and/or off keys, in accordance with embodiments of the present system it is envisioned that one or more of these keys may be generated by moving the primary or secondary device in a desired pattern (e.g., a horizontal waving, etc.). In this way, movement sensors (e.g., accelerometers, motion sensors, etc.) may identify for example movement actions and then form corresponding alarm information. For example, the process may analyze the motion information to detect a corresponding motion. In a case wherein the corresponding motion is determined to match a predetermined pattern (e.g., where the patterns may be defined for each action such as an off pattern, a snooze pattern, etc. as may be defined by default, by the user and/or by the system), the process may take an appropriate action without further interaction with a corresponding user interface. For example, in accordance with embodiments of the present system, moving the primary or secondary device in a sideways pattern (e.g., laterally) may indicate a snooze command. Similarly, in accordance with embodiments of the present system, moving the primary or secondary device in an up and down pattern may indicate an off command. This motion may be sensed by one or more sensors of a corresponding device such as motion sensors and may be determined by a controller of the corresponding device or, for example in a case wherein the device is a secondary device, identified motion information may be communicated to the primary device for determination by a controller of the

primary device. In this way, sensor data from the secondary device may be transmitted to the primary device in real time for analysis.

In accordance with embodiments of the present system, a user may shake or otherwise move the primary or secondary device in a desired pattern, the process may detect the desired pattern of motion (e.g., through an analysis of motion information from one or more sensors of the system), the process may then determine whether there is a command (or task) assigned to the detected pattern of motion, and in a case wherein it is determined that there is a command (or task) assigned to the detected pattern of motion, the process may perform this command or task.

FIG. **10** shows a portion of a system **1000** including a secondary device **1005** in accordance with embodiments of the present system. For example, a portion of the present system may include a processor **1010** (e.g., a controller) operationally coupled to a memory **1020**, one or more rendering devices **1030** such as a display, haptic device, etc., one or more sensors **1040**, one or more actuators **1060**, a transmit/receive (Tx/Rx) portion **1080**, and a user input device **1070**. In accordance with embodiments of the present system, although each of the memory, the rendering device, the one or more sensors, the one or more actuators **1060**, and the transmit/receive (Tx/Rx) portion **1080** are shown separately for clarity, one or more of these portions may be combined together with the processor. For example, the processor may include the transmit/receive (Tx/Rx) portion. Further, the portions shown may also be encompassed by one or more discrete devices (e.g., separate from the secondary device **1005**) such as portions of the rendering device **1030**, the user input device **1070** and/or other devices as described herein. For example, while the user input **1070** may form a portion of the secondary device **1005** (e.g., snooze key, etc.), the user input may also or alternatively be a portion of the primary device as described. Further, the transmit/receive (Tx/Rx) portion may be made up of two or more discrete portions, such as a transmitter/receiver portion and a discrete antenna. In addition, the memory **1020** may be any type of device for storing application data as well as other data (e.g., auditory, visual and haptic responses to alarm information) related to the described operation. The application data and other data are received by the processor **1010** for configuring (e.g., programming) the processor **1010** to perform operation acts in accordance with the present system. The processor **1010** so configured becomes a special purpose machine particularly suited for performing in accordance with embodiments of the present system.

The user input **1070** may include a keyboard, a mouse, a trackball, a motion-sensitive device or other device, such as a touch-sensitive display, which may be stand alone or be a part of a system, such as part of a personal computer, a personal digital assistant (PDA), a mobile phone (e.g., a smart phone), a monitor, a wearable display (e.g., smart glasses, etc.), a smart- or dumb-terminal or other device for communicating with the processor **1010** via any operable link. The user input device **1070** may be operable for interacting with the processor **1010** including enabling interaction within a user interface (e.g., GUI) as described herein. Clearly the processor **1010**, the memory **1020**, the rendering device **1030**, and/or user input device **1070** may all or partly be a portion of a computer system or other device such as a primary, secondary and/or other device as described herein.

The actuators **1060** may be controlled by the processor **1010** in accordance with embodiments of the present system. The actuators **1060** may control one or more haptic devices such as one or more vibrators, motors, etc., of the system so as to generate a desired vibration under the control of the processor **1010**. For example, in accordance with embodiments of the present system, the actuators **1060** may include a motor controller which may control the speed of a vibrator under the control of the processor **1010**. In accordance with embodiments of the present system, the actuators may be a portion of an external haptic device that may operate under control of the processor **1010** such as through a wireless link.

The methods of the present system are particularly suited to be carried out by a computer software program, such program containing modules corresponding to one or more of the individual steps or acts described and/or envisioned by the present system. Such program may of course be embodied in a computer-readable medium, such as an integrated chip, a peripheral device or memory, such as the memory **1020** or other memory coupled to the processor **1010**.

The program and/or program portions contained in the memory **1020** may configure the processor **1010** to implement the methods, operational acts, and functions disclosed herein. The memories may be distributed, for example between the primary and/or secondary devices, or local, and the processor **1010**, where additional processors may be provided, may also be distributed (e.g., as a portion of one or more of the primary device, the secondary device, the rendering device and/or other devices that operate in accordance with embodiments of the present system) or local to a device. The memories may be implemented as electrical, magnetic or optical memory, or any combination of these or other types of storage devices. Moreover, the term "memory" should be construed broadly enough to encompass any information able to be read from or written to an address in an addressable space accessible by the processor **1010**. The memory **1020** may include a non-transitory memory. With this definition, information accessible through a network such as the network **1080** is still within the memory, for instance, because the processor **1010** may retrieve the information from the network **1080** for operation in accordance with the present system.

The processor **1010** is operable for providing control signals and/or performing operations in response to input signals from the user input device **1070** as well as in response to other devices of a network (e.g., in response to signals received from a primary device) and executing instructions stored in the memory **1020**. The processor **1010** may include one or more of a microprocessor, an application-specific or general-use integrated circuit(s), a logic device, etc. Further, the processor **1010** may be a dedicated processor for performing in accordance with the present system or may be a general-purpose processor wherein only one of many functions operates for performing in accordance with the present system. The processor **1010** may operate utilizing a program portion, multiple program segments, or may be a hardware device utilizing a dedicated or multi-purpose integrated circuit.

While the present invention has been shown and described with reference to particular exemplary embodiments, it will be understood by those skilled in the art that present invention is not limited thereto, but that various changes in form and details, including the combination of various features and embodiments, may be made therein without departing from the spirit and scope of the invention.

Finally, the above-discussion is intended to be merely illustrative of the present system and should not be construed as limiting the appended claims to any particular embodiment or group of embodiments. Thus, while the

present system has been described with reference to exemplary embodiments, it should also be appreciated that numerous modifications and alternative embodiments may be devised by those having ordinary skill in the art without departing from the broader and intended spirit and scope of the present system as set forth in the claims that follow. In addition, the section headings included herein are intended to facilitate a review but are not intended to limit the scope of the present system. Accordingly, the specification and drawings are to be regarded in an illustrative manner and are not intended to limit the scope of the appended claims.

In interpreting the appended claims, it should be understood that:

a) the word "comprising" does not exclude the presence of other elements or acts than those listed in a given claim;

b) the word "a" or "an" preceding an element does not exclude the presence of a plurality of such elements;

c) any reference signs in the claims do not limit their scope;

d) several "means" may be represented by the same item or hardware or software implemented structure or function;

e) any of the disclosed elements may be comprised of hardware portions (e.g., including discrete and integrated electronic circuitry), software portions (e.g., computer programming), and any combination thereof;

f) hardware portions may be comprised of one or both of analog and digital portions;

g) any of the disclosed devices or portions thereof may be combined together or separated into further portions unless specifically stated otherwise;

h) no specific sequence of acts or steps is intended to be required unless specifically indicated;

i) the term "plurality of" an element includes two or more of the claimed element, and does not imply any particular range of number of elements; that is, a plurality of elements may be as few as two elements, and may include an immeasurable number of elements; and

j) the term and/or and formatives thereof should be understood to mean that only one or more of the listed elements may need to be suitably present in the system in accordance with the claims recitation and in accordance with one or more embodiments of the present system.

The invention claimed is:

1. An alarm system comprising:

a primary device having a first controller; and

at least one secondary device having at least one secondary controller and at least one rendering device;

wherein the first controller is configured to (i) determine whether at least one alarm event is set on the primary device, (ii) establish a wireless communication between the primary device and the secondary device when determination is made that the alarm event has been set on the primary device, (iii) generate a first alarm signal including first alarm rendering instructions based on the alarm event set, and (iv) transmit the first alarm signal including the first alarm rendering instructions from the primary device to the secondary device, and

wherein the secondary controller is configured to (i) generate second alarm rendering instructions for the rendering device based on the first alarm rendering instructions and (ii) render the second alarm rendering instructions on the rendering device.

2. The alarm and monitoring system of claim **1**, wherein the first controller is configured to determine capabilities of the secondary device prior to generating the first alarm signal including the first alarm rendering instructions.

3. The alarm and monitoring system of claim **2**, wherein the first controller is configured to generate the first alarm signal in accordance with the determined capabilities of the secondary device.

4. The alarm and monitoring system of claim **3**, wherein the first controller is configured to determine whether communication is established between the primary and secondary devices prior to generating the first alarm signal.

5. The alarm and monitoring system of claim **4**, wherein the first controller is configured to provide a user interface in accordance with the determined capabilities of the secondary device after the first controller determines that communication is established.

6. The alarm and monitoring system of claim **1**, wherein the secondary device includes a memory, and

wherein the first controller is configured to generate the first alarm signal in accordance with rendering data that is pre-stored in the memory of the secondary device.

7. The alarm and monitoring system of claim **1**, wherein the secondary device is configured to control one or more tertiary devices external to the secondary device to additionally render the second alarm rendering instructions on the tertiary device.

8. The alarm and monitoring system of claim **1**, wherein the at least one rendering device comprises at least one of an auditory, visual, and haptic rendering device to render the second alarm rendering instructions.

9. A method of operating an alarm and monitoring system comprising:

determining by a first controller on a primary device whether at least one alarm event is set on the primary device;

after determining the alarm event is set, establishing by the first controller communication between the primary device and a secondary device;

generating by the first controller a first alarm signal including first alarm rendering instructions based on the alarm event set;

transmitting the first alarm signal including the first alarm rendering instructions from the primary device to the secondary device;

generating by a secondary controller on the secondary device second alarm rendering instructions for a rendering device based on the first alarm rendering instructions; and

rendering the second alarm rendering instructions on the rendering device.

10. The method of claim **9**, further comprising, prior to generating the first alarm signal, determining by the first controller capabilities of the secondary device.

11. The method of claim **10**, wherein generating the first alarm signal includes generating the first alarm signal based on the determined capabilities of the secondary device.

12. The method of claim **11**, further comprising, prior to generating the first alarm signal, determining by the first controller whether communication is established between the primary and secondary devices.

13. The method of claim **12**, further comprising, after the first controller determines that communication is established, providing by the first controller a user interface in accordance with the determined capabilities of the secondary device.

14. The method of claim **9**, wherein generating the first alarm signal includes generating the first alarm signal based on rendering data that is pre-stored in a memory of the secondary.

15. The method of claim **9**, further comprising controlling by the secondary device one or more tertiary devices external to the secondary device such that the second alarm rendering instructions are rendered on the tertiary device.

16. The method of claim **9**, wherein rendering the second alarm rendering instructions on the rendering device includes rendering at least one of an auditory, visual, and haptic response on the rendering device.

* * * * *

EXHIBIT B

Amazon Patent Evaluation Express Agreement

This Amazon Patent Evaluation Express (APEX) Agreement ("Agreement") is between the Patent Owner (or Patent Owner's authorized representative) listed in Exhibit 1 and the Seller or Sellers (or their authorized representative(s)) listed in Exhibit 2 (collectively, "Participants").

Amazon.com, Inc. ("Amazon") has developed the APEX Procedure ("Procedure") for owners of United States utility patents to obtain an evaluation of their patent infringement claims against products offered by third-party sellers on amazon.com ("Evaluation"). By executing this agreement, the Patent Owner represents and warrants that it owns or has the right to enforce the patent identified in Exhibit 1 ("Patent"), and asserts that listings identified by the Amazon Standard Identification Numbers ("ASINs") in Exhibit 1 ("Products") infringe the patent claim identified in Exhibit 1.

By respectively executing Exhibits 1 and 2, Patent Owner and Seller agree as follows:

1. Following the Evaluation Procedure. Patent Owner and Seller have reviewed and agree to comply with the Procedure, which is incorporated herein by reference. Patent Owner agrees to accurately complete Exhibit 1, and Seller agrees to accurately complete Exhibit 2. Both Exhibits 1 and 2 are incorporated herein by reference.

2. Confidentiality; No Discovery. Participants agree not to disclose to third parties information or documents learned from other Participants, Amazon, or Evaluator in the Evaluation, except to their respective affiliates, legal counsel or as required by law; provided, however, that the fact that an Accused Product and ASIN (identified in Exhibit 1) was either removed or not as a result of an Evaluation, and the identity of the patent claim in that Evaluation, shall not be considered confidential. Participants agree that receipt or disclosure of any information relating to patents in APEX may not be used in court or any agency proceeding to establish notice of patent infringement, knowledge of any patent, or to establish damages. Participants agree not to seek discovery from other Participants, Amazon, or Evaluator relating to the Evaluation in any litigation, arbitration, or agency proceeding.

3. Waiver of Claims. Participants acknowledge and agree that neither Amazon nor Evaluator shall be liable for any claims arising out of the Procedure or Evaluation, and Participants hereby waive any claims (including claims that are unknown or are based on activities that have not yet occurred) against Amazon or Evaluator relating to the Procedure or Evaluation; provided that, the foregoing shall not be deemed to waive any rights or claims of a Participant to receive a refund of amounts paid by a Participant that should be returned to a Participant pursuant to the rules of the Procedure. Participants agree that Amazon's liability to any Participant relating to the Evaluation is limited to any payment made by that Participant to the Evaluator. Participants agree not to sue Amazon or its affiliates for infringement of the Patent with respect to the ASINs listed on Exhibit 1 or materially identical products. Nothing in this Agreement shall limit a Participant's ability to sue any Seller or other third party for infringement of the Patent.

4. Updating Participant's Information. Contact during the Evaluation will occur through the email addresses listed in Exhibits 1 and 2. It is each Participant's responsibility to ensure that its email address and other information in Exhibits 1 and 2 remain accurate and current.

5. General Matters. This Agreement shall be governed by the laws of the state of Washington, USA, and Participants agree to the jurisdiction and venue of the federal and state courts located in King County, Seattle, Washington. Any dispute regarding this Agreement may be submitted to the Evaluator, and if not resolved by the Evaluator may only be resolved by Amazon, in its sole discretion. Participants may not assign their rights or obligations under this Agreement. This Agreement does not create any partnership or any fiduciary relationship between or among the Participants, the Evaluator and Amazon. No third party is intended to be a beneficiary of this Agreement, except that the parties agree and acknowledge that the Evaluator and Amazon are third- party beneficiaries of Sections 2 and 3 of this Agreement. This Agreement and the APEX Procedure are the entire agreement for the Evaluation and supersede any prior agreements related to the Evaluation.

Exhibit 1: Patent Owner-Supplied Information

Patent Owner name: JWIN ELECTRONICS CORP

Patent Owner physical address: 2 Harbor Park Drive Port Washington, NY 11050, USA

Names of any corporate parents, subsidiaries, or other entities related to Patent Owner:

iLuv Creative Technology

Name of individual contact for Patent Owner or Patent Owner's authorized representative:

Kongsik Kim

Is Patent Owner registered in Amazon's Brand Registry? If yes, please identify the brand(s) registered in Brand Registry:

iLuv

Email Address for contact (this email address will be used by the Evaluator and Amazon for communications related to the Evaluation): kongsik.kim@uonelaw.com

United States utility patent number ("Asserted Patent") for Evaluation: 10713929

Patent Claim number for Evaluation: 1

Amazon Standard Identification Numbers (ASINs) of Accused Products:

B09KKTZCKS	B082VHC69X	B07XJYRYTZ	B01LY2OYQJ	

Signature: /K. Kim/

Name: Kongsik Kim

Title: Attorney of record

Date: 12/23/2022

Exhibit 2: Seller-Supplied Information

Seller name:

Seller physical address:

Names of any corporate parents, subsidiaries, or other entities related to Seller:

Name of individual contact for Seller or Seller's authorized representative:

Email Address for contact (this email address will be used by the Evaluator and Amazon for communications related to the Evaluation):

Amazon Standard Identification Numbers (ASINs) of Accused Products for which Seller will participate in the Evaluation:

Signature: _____

Name: _____

Title: _____

Date: _____

EXHIBIT C

Bellman & Symfon®

Vibio

Overview Inside out Resources

Art. no. BE1221

Vibio

Vibio is a wireless bed shaker that connects to your mobile via Bluetooth. It comes with a free app where you can create multiple alarms, choose vibration power and allow notifications from calls or messages. Vibio is the ideal portable alarm clock for heavy sleepers and deaf and hard of hearing people.

In the box

- ✓ Vibio
- ✓ USB cable
- ✓ Leaflet

Setup
Read the quickguide ›

Manual
Learn how to use it ›

Warranty
All you need to know ›

Support
Talk to an expert ›

Easy to use app

Vibio connects to your mobile via Bluetooth and comes with a free and user-friendly app that is available for both iOS and Android. In the Vibio app, you can create multiple alarms, choose vibration power and pick your favourite wakeup sound.

Get the latest version
iOS 4.0 / Android 4.2 at:

Download on the App Store

GET IT ON Google Play

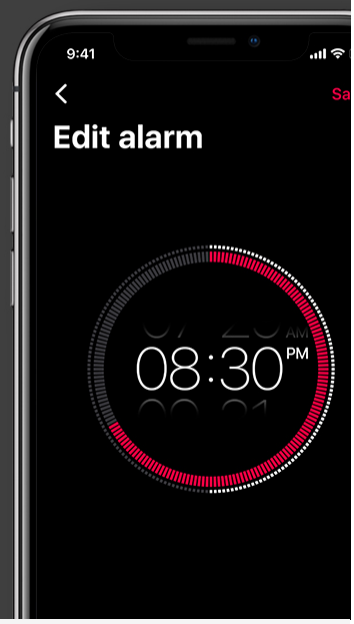
What's new:

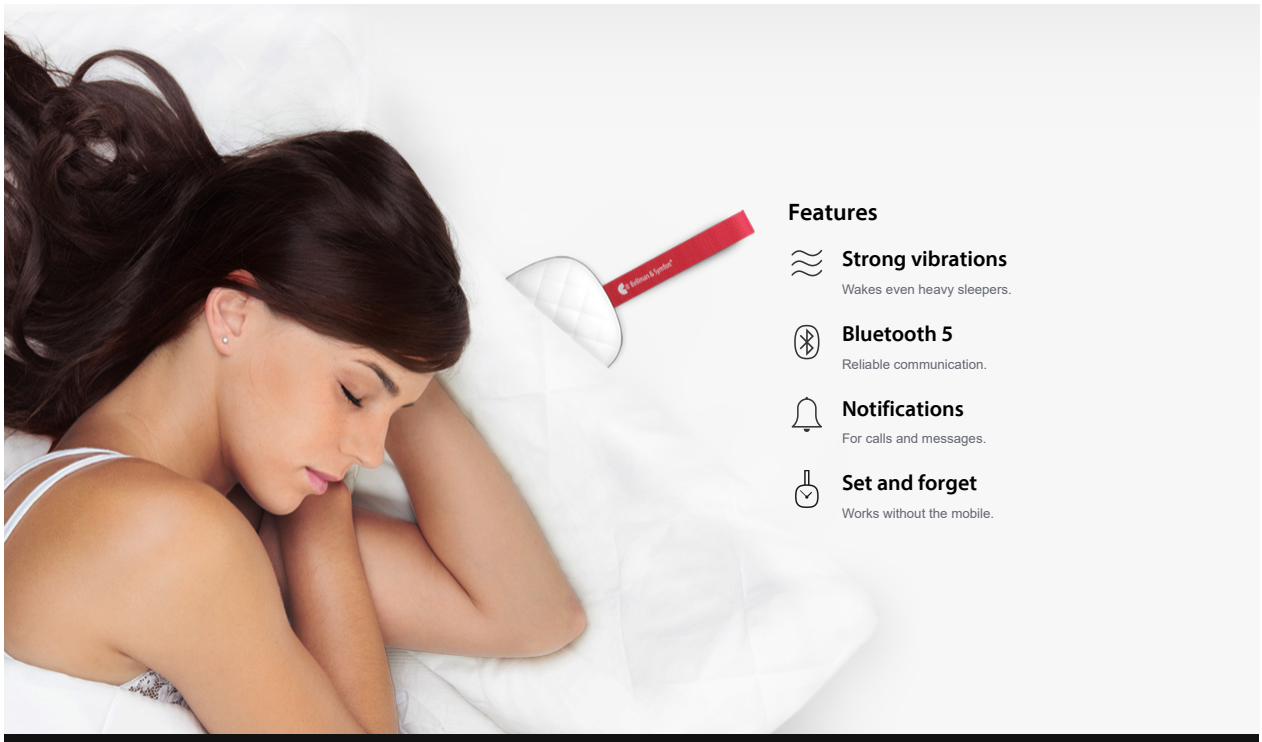
VoiceOver / TalkBack
Supports this accessibility feature for visual-impaired.

Dark mode
Boosts sleep and reduces eye strain.

Tablet support
Optimized for large screen devices.

Do Not Disturb
Allows calls from Favorite contacts.





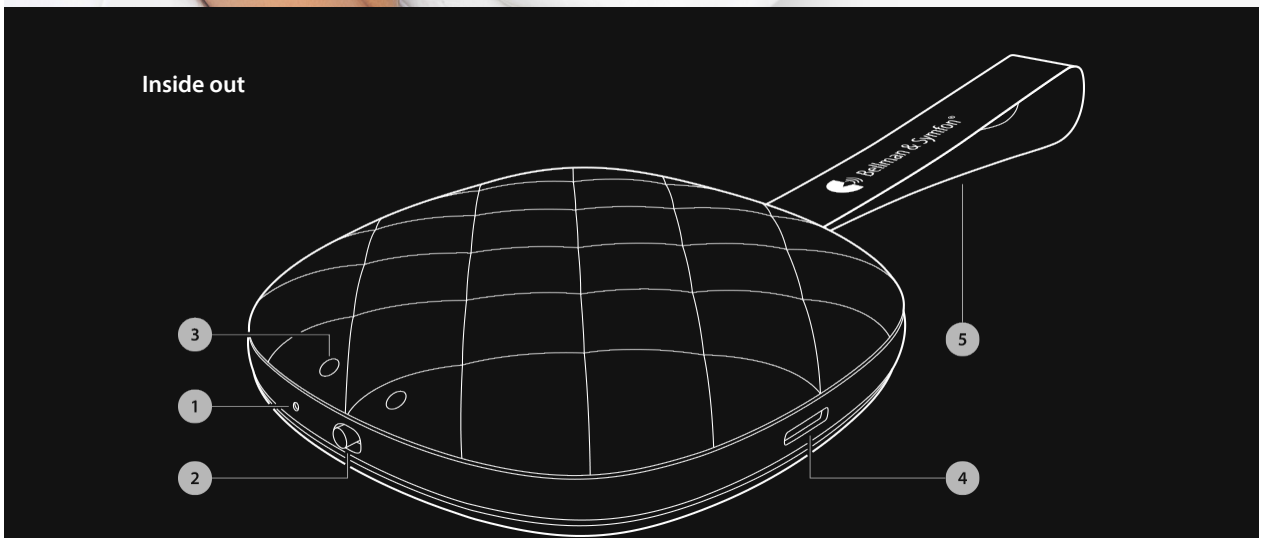
Features

Strong vibrations
Wakes even heavy sleepers.

Bluetooth 5
Reliable communication.

Notifications
For calls and messages.

Set and forget
Works without the mobile.



Buttons & controls

1 Reset button
2 On/Off
3 LED eyes
4 USB outlet
5 Snooze strap

Dimensions

Body 94 × 94 × 27 mm
Snooze strap 15 × 120 mm

Weight

153 g

Battery

1 × 3.7 V AA Lithium-ion

Connectivity

Bluetooth 5
Coverage Up to 30 m
Input USB Micro-B jack

Compatible devices

iPhone 6S and later
Modern Android phones

Compatible OS

iOS11 and later
Android 4.4 and later

Color

White / Silver / Red

Environment

For indoor use only
Do not expose to moisture

In the box

Bluetooth bed shaker
Charging cable
Getting started leaflet

Images

Right-click on the image and select "Save image as ..." to download the high-resolution image file.



Resources

Click on the links below to access in-depth technical information and other useful resources.

Video
Watch an introduction ›

Datasheet
Get the full specs ›

User manual
Learn how to use it ›

Medical device regulation
Important user info ›

Brochure
Discover the benefits ›

Product compliance
Read the documentation ›

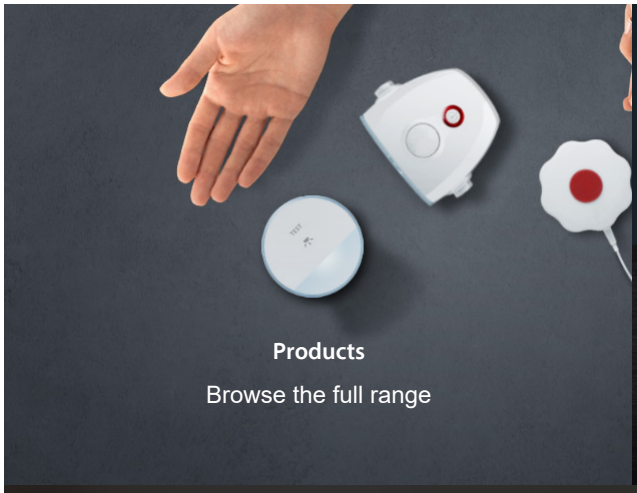
APP compliance
Read the documentation ›

Customer service

We are here to help. If you are experiencing problems with your Bellman & Symfon product, please don't hesitate to contact us.

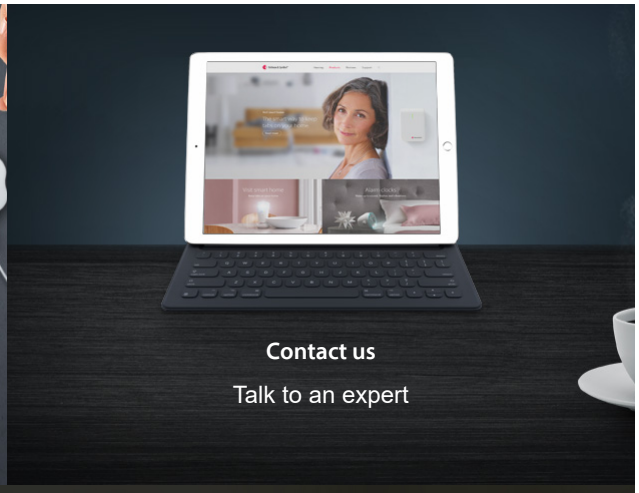
Call our customer support, Monday thru Friday, 08:00-16:45 CET.
+46 31 748 37 50

Write to us by e-mail. Our experts will get back to you as soon as possible.
Send an e-mail ›



Products

Browse the full range



Contact us

Talk to an expert

Retailers
In your area

Contact us
Regional offices

Products
Browse the range

For installers
Read the guides

Company

- Commitment
- Offices
- Career
- History

Highlights

- Visit
- Light My Way
- Maxi Pro
- Vibio
- Visit Demo

Resources

- Visit installers guide
- Product catalog
- Warranty conditions
- Support

Legal

- Privacy Policy
- Terms of Use
- ISO Certificates
- Cookies
- MDR Information

Improving quality of life for deaf and hard of hearing people.

English

EXHIBIT D

Roll over image to zoom in

2 VIDEOS

Bellman & Symfon Vibio - Wireless Bedshaker Alarm Connects to Mobile Device via Bluetooth - Create Custom Alarms on App : for Heavy Sleepers & People Who Can Not Hear Their Alarm, Deaf & Seniors

Visit the Bellman & Symfon Store

4.3 out of 5 stars 71 ratings

Price: $119.95

No Import Fees Deposit & $9.24 Shipping to Germany Details

Coupon: Save an extra 5% when you apply this coupon. Terms

Get $50 off instantly: Pay $69.95 upon approval for the Amazon Rewards Visa Card.

Brand	Bellman & Symfon
Material	Plastic
Shape	Round
Power Source	Corded Electric
Theme	People
Mounting Type	Tabletop

See more

About this item

- POWERFUL VIBRATIONS - Wakes even heavy sleeps, choose your vibration power, your favorite wake up sound, and create multiple alarms on the free easy to use app; if you want to snooze the alarm snooze on the app or use the snooze strap by pulling once to snooze or twice to turn the alarm off
- NOTIFICATION SETTINGS - Choose your notification settings to allow or disable notifications from calls or messages
- TRAVEL FRIENDLY - Great for people on the move, small and compact alarm system; place under your pillow or mattress for a vibration wake up
- SET & FORGET - Vibio remembers your alarms and wakes you even when your phone is not connected. So if the battery dies on your phone in the night, Vibio will still make sure you get up on time.
- INCLUDED - Vibio Bedshaker, charging cable, getting started leaflet, downloadable free app (smartphone not included)

Customer ratings by feature

Easy to use	3.5
Easy to read	3.4
Brightness	3.0

See all reviews

Note: Products with electrical plugs are designed for use in the US. Outlets and voltage differ internationally and this product may require an adapter or converter for use in your destination. Please check compatibility before purchasing.

$119.95
No Import Fees Deposit & $9.24 Shipping to Germany Details

Delivery **Monday, June 13**. Order within 23 hrs 49 mins

Or fastest delivery **Tuesday, June 7**

Deliver to Germany

In Stock.

Qty: 1

Add to Cart

Buy Now

Secure transaction

Ships from Amazon
Sold by Bellman & Symfon

Return policy: Eligible for Return, Refund or Replacement within 30 days of receipt

Support: Free Amazon product support included

Add a gift receipt for easy returns

Add to List

4 stars and above

iLuv Smart Shaker 3, Vibration Bed Shaker Bluetooth Alarm Clock with Multiple Alarm...
$59.99 prime
4.0 out of 5 stars 606

Reviews mention:
"App is easy to use and works well."

USCCE Loud Dual Alarm Clock with Bed Shaker - 0-100% Dimmer, Vibrating Alarm Clock ...
$27.99 prime
4.5 out of 5 stars 2,048

Reviews mention:
"Multi brightness, sound, sound level, vibration levels and super easy to set up."

Shock Clock 2 - Wearable Silent Vibrating/Zapping Alarm Clock for Heavy…
$149.99 prime
4.0 out of 5 stars 1,584

Reviews mention:
"The module was easy to pair with the app, and the app was very intuitive as well."

Aurora Light, Wake Up Light Sunrise Alarm Clock for Kids, Heavy Sleepers, Bedroom, ...
$56.99 prime
4.5 out of 5 stars 247

Reviews mention:
"The features are very nice and easy to use."

Extra Loud Alarm Clock with Bed Shaker, Vibrating Alarm Clock for Heavy Sleepers He...
$19.99 prime
4.5 out of 5 stars 8,751

Reviews mention:
"It's easy to set, time is large and easy to read, perfect brightness."

Sonic Bomb Dual Extra Loud Alarm Clock with Bed Shaker, Black | Sonic Alert Vibrati...
$34.99 prime
4.5 out of 5 stars 29,693

Reviews mention:
"Very effective product and highly recommended."

Sunrise Alarm Clock, Wake Up Light with D Alarms Clock for Bedrooms, Digital Sm
$32.99 prime
4.5 out of 5 stars 56

Have a question?

Find answers in product info, Q&As;, reviews

Type your question or keyword

Product Description

Meet Vibio

Shakes You Awake

Whether you are ready to drop after the daily grind or just need a catnap to recharge, the Vibio Bluetooth bed shaker will make sure you get up on time. Using silent but powerful vibrations, Vibio is the perfect choice for heavy sleepers, couples and people with hearing loss.

Soft and Cozy

Vibio features a soft and organic design with a quilted pattern that harmonizes seamlessly with your bed. Yet it's powerful enough to place under your mattress, so nothing disturbs your bedroom Zen.

Set and Forget

Vibio remembers all your alarms and wakes you even when your phone is not connected. So if the battery dies on your phone during the night, Vibio will still make sure you get up on time in the morning.

GET IT ON Google Play

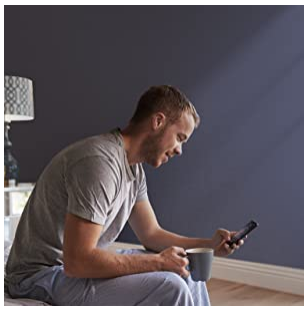
Download on the App Store

Bluetooth

Bluetooth Connection
Available for both iPhone and Android

Easy to Use App

Vibio connects to your mobile via Bluetooth and comes with a free and user-friendly app that is available for both iOS and Android. In the Vibio app, you can create multiple alarms, choose vibration power and pick your favorite



Vibrating Alerts

Vibio can also notify for calls and messages during your nap, so you don't miss out on anything important. Just switch on alerts in the settings menu.

Adjust and Set the Vibration Levels

Vibio has three different settings for vibration strength.

- Soft
- Medium
- Strong

Smart Snooze

Use the app or the strap.

Not ready to get out of bed yet? Snooze from the app or pull the snooze strap under your pillow or mattress for a few more minutes in the sack.

Compare with similar items

	This item Bellman & Symfon Vibio - Wireless Bedshaker Alarm Connects to Mobile Device via Bluetooth - Create Custom Alarms on App : for Heavy Sleepers & People Who Can Not Hear Their Alarm, Deaf & Seniors	JIYUERLTD 4" Quartz Wooden Alarm Clock with Gray Linen Face Embroidery 3D Numbers,Non-Ticking Silent,Backlight,Battery Operated,Natural Classic Style for Home Office Hotel	Unicorn Night Light,USB Rechargeable Kids Night Light with Alarm Clock Timer,Portable Nursery Lamp Lights for Kids, Unicorn Nightlight for Boys Girls Bedroom	Digital Dual Alarm Clock for Bedroom, USB Charging Port, 0-100% Display Brightness Dimmer, 7 Color Night Light , Adjustable Volume, Snooze, Simple Operation LED Alarm Clock for Kids, Teens (7 Color)
	Add to Cart	Add to Cart	Add to Cart	Add to Cart
Customer Rating	4.2 (71)	4.6 (46)	4.0 (1)	4.5 (303)
Price	$119.95	$17.69	$30.99	$21.49
Sold By	Bellman & Symfon	JIYUERLTD US	Xiamen xike Trading Co., Ltd	dgmirage

Product information

Product Dimensions	3.7 x 3.7 x 1.1 inches
Item Weight	5.4 ounces
Manufacturer	Bellman & Symfon
ASIN	B082VHC69X
Batteries	1 Lithium ion batteries required. (included)
Customer Reviews	4.2 out of 5 stars 71 ratings
Best Sellers Rank	#450,285 in Home & Kitchen (See Top 100 in Home & Kitchen) #980 in Alarm Clocks
Date First Available	December 17, 2019

Warranty & Support

Product Warranty: For warranty information about this product, please click here

Feedback

Would you like to **tell us about a lower price?**

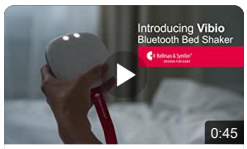
Product guides and documents

Specification Sheet (PDF)

Videos

Page 1 of 2

Videos for this product



WHY Vibio Bluetooth Bed Shaker - Introducing key features

Bellman & Symfon

Bellman & Symfon Vibio Bluetooth Bed Shaker - Vibration for wake u…

Bellman & Symfon

Videos for related products

USCCE Loud Dual Alarm Clock with Strong Bed Shaker

USCCE

Sonic Bomb Portable Bluetooth Wireless Alarm Super Shaker

Sonic Alert MI

Bellman & Symfon Digital Alarm Clock (Incl. Bed shaker) models -…

Bellman & Symfon

Upload your video

Products related to this item

Page 1 of 20

Sponsored

Bellman & Symfon Alarm Clock Pro with Bed Shaker | Option of Loud Alarm, Bright Fla...

4.6 13

$179.95 prime

iLuv Smart Shaker 3, Vibration Bed Shaker Bluetooth Alarm Clock with Multiple Alarm...

4.2 606

$59.99 prime

Extra Loud Alarm Clock for Heavy Sleepers Adults, Vibrating Alarm Clock for Hearing...

4.6 126

$26.99 prime

Bellman & Symfon Maxi Pro Bluetooth Personal Sound Amplifier + TV Listening Kit for...

3.5 10

$399.95 prime

Pavlok Shock Clock Wake Up On Time Trainer for Heavy Sleepers and Students…

4.2 833

$129.99 prime

ORKA Talking Clock for Seniors 2021. Voice Recordable. Very Large Loud Digital Day ...

4.6 310

$59.99 prime

Lunderg Early Alert B Alarm System - Wirel Bed Sensor Pad & Pa - Elderly Mo...

4.6 269

$119.95 prime

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Customer Questions & Answers

See questions and answers

Loading

Customer reviews

4.2 out of 5

71 global ratings

5 star	69%
4 star	9%
3 star	5%
2 star	0%
1 star	16%

How customer reviews and ratings work

Sponsored

Reviews with images

See all customer images

Top reviews

Top reviews from the United States

Catherine R

Worth the Price and awesome!

Reviewed in the United States on December 13, 2020

Verified Purchase

The alarm is easy to use and place. I can't feel it in my 2nd pillow but feel the vibrations easily. You have an option of sound or no sound. I purchased this since I am deaf without my cochlear implants and have had no issues waking each morning. I love the fact that I only need to charge maybe once monthly

17 people found this helpful

Helpful | Report abuse

Anne-Marie

Take the time to learn how to use this properly and you will more likely be pleased.

Reviewed in the United States on April 14, 2021

Verified Purchase

After failed results on the first few nights, I planned to return the device to Amazon. Because I really, REALLY wanted it to work, I took out the instruction booklet and re-read it. I experimented with different setup possibilities in the areas I was uncertain about and gave it a few more tries during non-essential wake-up times. This device has not failed me once since I figured out how to use it properly. There are probably a few clarifications that could be added to the instructions which would help in the set up process and perhaps minimize the number of returns.

7 people found this helpful

Helpful | Report abuse

Akasha Tsang

App crashes

Reviewed in the United States on September 12, 2021

Verified Purchase

Here are the reasons I returned it:
* The app crashes after less than 30 seconds of use. It took an intolerable quantity of app restarts to set an alarm so I could see if the device would go off.
* App not compatible on all newish Android devices.
* The vibrating alarm isn't as strong as another bed shaker device I bought to compare with.
* The charging port is micro usb (older tech) and the other device was usb-c (newer tech).
* I prefer black and this product is only available in white. The other device is available in black.

I decided to return this product after attempting to set it up for about 30 mins. Previous low star ratings mentioned trouble pairing, which I typically disregard. My not-so-old phone (Samsung Note) and relatively new tablet (Samsung Galaxy Tab S6 Lite) don't have trouble pairing with devices.

What I did have trouble with was finding the app. I primarily use my tablet to control my smart home devices. When I tried to find the app in Google Play, the only app that matched the product name, Vibio, was for a

Read more

6 people found this helpful

Helpful | Report abuse

Mary-Lynn Foster

Reliable!

Reviewed in the United States on January 10, 2021

Verified Purchase

The product arrived much earlier than the delivery date, so that was nice. This wireless bed shaker works seamlessly with the app and I love that it shows me the battery strength of the shaker. You can turn the alarm off, or snooze it, via the app or the shaker. I'm completely deaf on my right side, so if I happen to be sleeping on my left side, I don't hear an alarm. I need to have a reliable shaker and this is it.

5 people found this helpful

Helpful | Report abuse

Tessa

★★★★★ **Never sleep thru an alarm again!**

Reviewed in the United States on April 27, 2022

Verified Purchase

I've been using this alarm for several months with no trouble. I have to wear a CPAP and have an oxygen concentrator going all night. With all that noise, I can't hear an alarm unless it's really loud. My alarms always woke my daughter on the other side of the house. I took a chance with the Bellman & Symfon Vibio vibrating alarm and I'm super happy. This is the absolute best alarm clock invention ever and easy to program. I put it in a small drawstring pouch (made of a non-slick material) to keep it from sliding out of my pillow case. I never feel the unit thru the pillow, but the vibration definitely wakes me.
If you're on the fence about it because of the cost, let me tell you that it's worth every penny.

One person found this helpful

Helpful | Report abuse

Anonymous

★☆☆☆☆ **Poor Product**

Reviewed in the United States on October 14, 2020

Verified Purchase

I bought this product for my child. I thought this would of been a great product. Unfortunately, I have had so many issues with this product. The battery dying after 1 day. The product won't pair, stating to bring the phone closer to the product when the phone is sitting next to or on top of it and it still "can't " find it. This product constantly disconnecting. I have sent multiple emails to the company and I have NOT heard back from them.

9 people found this helpful

Helpful | Report abuse

Dyzieann

★☆☆☆☆ **Failed Three Times**

Reviewed in the United States on October 31, 2021

Verified Purchase

This alarm failed to go off not once, not twice, but three separate times. At first I thought it was human error, but each time after I checked the night before and confirmed the alarm was connected, programmed for my desired time, and under my pillow. I emailed the company for support and my email was never answered. Total waste of money.

3 people found this helpful

Helpful | Report abuse

Terri H.

★★★★★ **Gets me out of bed!**

Reviewed in the United States on December 3, 2021

Verified Purchase

I work long hours back to back and am a heavy sleeper. No alarm was working and I was oversleeping then getting to work late. This saved me! I keep it under my pillow and the buzzing gets me up every time! No more tardies for me!!

2 people found this helpful

Helpful | Report abuse

See all reviews ›

Top reviews from other countries

Translate all reviews to English

Josi Antonio Martmnez de la Vega Labra

★★★★★ **Equilibrio entre diseño y funcionalidad**

Reviewed in Mexico on April 15, 2022

Verified Purchase

Practico para transportar y potencia adecuada para quienes no oyen

Report abuse

Translate review to English

See all reviews ›

Sponsored

Your recently viewed items and featured recommendations

After viewing product detail pages, look here to find an easy way to navigate back to pages you are interested in.

› View or edit your browsing history

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Become a Delivery Driver
Start a package delivery business
Advertise Your Products
Self-Publish with Us
Host an Amazon Hub
› See More Ways to Make Money

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Amazon Rewards Visa Signature Cards
Amazon Store Card
Amazon Secured Card
Amazon Business Card
Shop with Points
Credit Card Marketplace
Reload Your Balance
Amazon Currency Converter

Let Us Help You
Amazon and COVID-19
Your Account
Your Orders
Shipping Rates & Policies
Amazon Prime
Returns & Replacements
Manage Your Content and Devices
Amazon Assistant
Help

amazon
English
United States

Amazon Music — Stream millions of songs
Amazon Advertising — Find, attract, and engage customers
Amazon Drive — Cloud storage from Amazon
6pm — Score deals on fashion brands
AbeBooks — Books, art & collectibles
ACX — Audiobook Publishing Made Easy
Alexa — Actionable Analytics for the Web
Sell on Amazon — Start a Selling Account
Amazon Business — Everything For Your Business
Amazon Fresh — Groceries & More Right To Your Door
AmazonGlobal — Ship Orders Internationally
Home Services — Experienced Pros Happiness Guarantee
Amazon Ignite — Sell your original Digital Educational Resources
Amazon Web Services — Scalable Cloud Computing Services
Audible — Listen to Books & Original Audio Performances
Book Depository — Books With Free Delivery Worldwide
Box Office Mojo — Find Movie Box Office Data
ComiXology — Thousands of Digital Comics
DPReview — Digital Photography
Fabric — Sewing, Quilting & Knitting
Goodreads — Book reviews & recommendations
IMDb — Movies, TV & Celebrities
IMDbPro — Get Info Entertainment Professionals Need
Kindle Direct Publishing — Indie Digital & Print Publishing Made Easy
Amazon Photos — Unlimited Photo Storage Free With Prime
Prime Video Direct — Video Distribution Made Easy
Shopbop — Designer Fashion Brands
Amazon Warehouse — Great Deals on Quality Used Products
Whole Foods Market — America's Healthiest Grocery Store
Woot! — Deals and Shenanigans
Zappos — Shoes & Clothing
Ring — Smart Home Security Systems
eero WiFi — Stream 4K Video in Every Room
Blink — Smart Security for Every Home
Neighbors App — Real-Time Crime & Safety Alerts
Amazon Subscription Boxes — Top subscription boxes – right to your door
PillPack — Pharmacy Simplified
Amazon Renewed — Like-new products you can trust

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EXHIBIT E

FW: Notice: Policy Warning

Sylvia Xie <syx@bellman.com>
Wed 1/18/2023 8:53 AM

To: Peter Jungvid <pj@bellman.com>

FYI

-----Original Message-----
From: notice-dispute@amazon.com <notice-dispute@amazon.com>
Sent: Tuesday, January 17, 2023 4:13 PM
To: Amazon BSN <amazon.bsn@bellman.com>
Subject: Notice: Policy Warning

Hello,

We removed some of your listings because we received a report from a rights owner that they infringe the rights owner's patent. The rights owner communication about the alleged infringement and the listings we removed are at the bottom of this message.

Why did this happen?
We received a report from a rights owner alleging that one or more of your listings may be infringing the intellectual property rights of others. Listing content infringing on the intellectual property of others is against our policies.

We're here to help.
If you need help understanding why your listings may infringe the intellectual property of others, please search for "Intellectual Property Violations" in Seller Central Help (https://sellercentral.amazon.com/gp/help/external/201361070).

How do I reactivate my listing?
To reactivate your listing you may provide the following:
-- A letter of authorization or a licensing agreement from the manufacturer or rights owner demonstrating that your product sales are lawful. External links are not accepted. For security reasons, we only accept attachments in the following file formats: .jpeg, .jpg, .pjpeg, .gif, .png, .tiff.

How do I submit this information?
Go to Received Intellectual Property Complaints under the Product Policy Compliance section in account health (https://sellercentral.amazon.com/performance/dashboard?ref=ah_em_mpa) and locate the deactivation record for this product listing. Click on the Appeal button next to the listing deactivation record to submit information necessary to reactivate your listing.

Have your listings been removed in error?
If you have never sold or listed the product, please reach out to us and tell us.
If you think that the rights owner has made an error in sending the notice, please reach out to the rights owner and ask them to submit a retraction of this notice. We may only accept retractions that the rights owner submits to us directly. We do not accept forwarded or attached retractions.

These are the rights owner's contact details:
iLuv
kongsik.kim@uonelaw.com

For any other reason, please explain to us why you were warned in error so that we can investigate the case.

What happens if I do not provide the requested information?
If we do not receive the requested information, your listings will remain inactive.

If you do not provide the information within 60 days, you will receive a request to remove the inventory associated with these listings per our removal policy (https://sellercentral.amazon.com/gp/help/202000820). Failure to address this request can lead to destruction of your inventory.

ASIN: B082VHC69X
Infringement type: Patent
Patent: 10,713,929
Complaint ID: 11605203911

You can view your account performance (https://sellercentral.amazon.com/performance/dashboard?reftag=email_warn) or select Account Health on the home screen of the Amazon Seller app on your iOS or Android device. The Account Health dashboard shows how well your account is performing against the performance metrics and policies required to sell on Amazon.

-- iOS: https://itunes.apple.com/us/app/amazon-Seller/id794141485
-- Android: https://play.google.com/store/apps/details?id=com.amazon.sellermobile.android&hl=en

EXHIBIT F

Roll over image to zoom in

iLuv Smart Shaker 3, Vibration Bed Shaker Bluetooth Alarm Clock with Multiple Alarm & Vibration Settings, Call Message Notifications, Dexcom CGM Alerts, Compatible with Apple & Android, Black

Visit the iLuv Store

4.3 out of 5 stars 980 ratings

Amazon's Choice in Alarm Clocks by iLuv

-40% $59.99

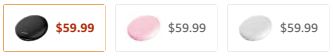
List Price: $99.99

FREE Returns

Get $60 off instantly: Pay $0.00 $59.99 upon approval for the Amazon Prime Store Card. No annual fee.

Available at a lower price from other sellers that may not offer free Prime shipping.

Color: **Black**



Brand	iLuv
Color	Black
Display Type	Digital
Special Feature	battery indicator, alarm, snooze
Product Dimensions	5.3"W x 6.9"H
Power Source	Battery Powered

See more

About this item

- 5 VIBRATION STRENGTHS: This wireless vibration alarm bedshaker is made for everyone and anyone. The Smart Shaker 3 is designed to accommodate all types of sleepers, light or heavy, since the vibration's strength can be easily adjusted between 5 different strength levels. This bedshaker alarm clock is perfect for heavy sleepers, deep sleepers, the deaf, the seniors, the elderly, kids, children, teenagers, college students and anyone who needs an extra kick to wake up and get out of bed.
- MULTIPLE ALARMS & SETTINGS: You can schedule multiple flexible alarms on your smartphone through the Smart Shaker 3 app. Through the app you can create multiple alarms, select the vibration strength (5-levels), customize alarm days and toggle on/off for individual alarm settings. This wireless vibration alarm clock will go off even if your phone is turned off since the Smart Shaker 3 stores all your settings within the device. The app is available on Apple App Store and Google Play Store.
- NOTIFICATIONS & ALERTS: The Smart Shaker 3 LED indicators display the battery life of the alarm clock as well as alerts for any incoming calls, messages, and social media notifications. The white LED lights will indicate the battery level while the green flashing LED lights will indicate any incoming notifications. You can also toggle on/off any of the notifications.
- WAKE UP IN SILENCE: Conventional alarm clocks will emit a loud obnoxious beeping noise which will surely wake up your partner or roommate. The Smart Shaker 3 will ensure that even the heaviest, deepest sleepers will be able to wake up through its powerful vibration strength without waking the person beside them. Simply place the Smart Shaker 3 under your pillow and wake up to a strong vibration without disturbing your partner or roommate.
- BEST ALARM CLOCK FOR KIDS: We know that mornings are often challenging for school kids, especially the heavy sleepers. Children tend to hit the snooze button and fall back asleep or they ignore the loud buzzer alarm during sunrise. This compact bedside vibration alarm clock helps end that pattern. The Smart Shaker 3 is simply the best alarm clock for kids, children, and teenagers.

Customer ratings by feature

Vibration strength 4.5

For traveling	4.3
Easy to use	4.1
Easy to read	4.1

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All-New Echo Dot (5th Gen, 2022 release) with clock | Smart speaker with clock and Alexa | Cloud Blue
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prime | & Up | Price: $50 - $100 | Color: Black | Power Source: Battery Powered | Shape: Round | Mechanism: Electrical | Special Feature: Alarm | More Filters

2,906	39	263	44	28,962	140	181	9
$68.00 prime	$69.99 prime	$59.99 prime	$28.95 prime	$39.95 prime	$11.99	$22.99 List: $28.99	$41.99 prime
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164	132	61	53
$29.97 prime	$79.99 prime	$31.98 prime	$17.46 List: $19.99
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From the brand

Product Description

Phone Alerts

Instant Notifications

Get alerts for incoming calls, messages, social media, and Dexcom diabetic reminders even if your phone is away from you.

Portable Size

Travel Friendly

Ergonomically designed, this alarm clock is portable and functional with 14 days of battery life on a single charge.

Compare with similar items

	This item iLuv Smart Shaker 3, Vibration	Umedo Alarm Clock for Kids, Digital Alarm	Umedo Alarm Clock for Bedrooms Dual	Searon Digital Alarm Clock with LED

	Bed Shaker Bluetooth Alarm Clock with Multiple Alarm & Vibration Settings, Call Message Notifications, Dexcom CGM Alerts, Compatible with Apple & Android, Black Add to Cart	Clock with 8 Mode RGB Night Light, Mirrored Clock with Dual Alarm, Weekday/Weekend Mode, USB Port, White Noise Sleep Helper, Dimmer, Volume Adjustable - Pink Add to Cart	Alarm Clocks 8 RGB Night Lights, 3 Mode Mirror Clock, USB Port, 8 White Noise, 7 Wake-Up Sounds, 16 Level Volume, 0%-100% Dimmable, Bedside Clock for Kids & Adult Add to Cart	Display, Brightness Adjustment, Battery Backup, Snooze, 12/24Hr for Heavy Sleepers Kid Senior Teen Boy Girl Kitchen - 5.5 x 3 x 1.6 Inches. (Wood Grain Color) Add to Cart
Customer Rating	★★★★☆ (980)	★★★★½ (202)	★★★★½ (202)	★★★★☆ (20)
Price	$59.99	$22.98	$22.98	$16.99
Shipping	FREE Shipping. Details	FREE Shipping on orders over $25.00 shipped by Amazon or get **Fast, Free Shipping** with Amazon Prime	FREE Shipping on orders over $25.00 shipped by Amazon or get **Fast, Free Shipping** with Amazon Prime	FREE Shipping on orders over $25.00 shipped by Amazon or get **Fast, Free Shipping** with Amazon Prime
Sold By	iLuv	Umedo	Umedo	SEARON-US

Product information

Brand	iLuv
Color	Black
Display Type	Digital
Special Feature	battery indicator, alarm, snooze
Product Dimensions	5.3"W x 6.9"H
Power Source	Battery Powered
Age Range (Description)	Kid
Shape	Round
Theme	People
Frame Material	Acrylonitrile Butadiene Styrene
Are Batteries Included	Yes
Mounting Type	Tabletop
Item Weight	0.01 Ounces
Number of Batteries	1 Lithium Polymer batteries required. (included)
Alarm Clock	Yes
Operation Mode	Electrical
Product Dimensions	1.7 x 5.3 x 6.9 inches
Item Weight	0.01 ounces
Manufacturer	iLuv
ASIN	B08V6QCBTS
Country of Origin	China
Item model number	SMSHAKER3BK
Batteries	1 Lithium Polymer batteries required. (included)
Customer Reviews	★★★★☆ 980 ratings 4.2 out of 5 stars
Best Sellers Rank	#31,744 in Home & Kitchen (See Top 100 in Home & Kitchen) #159 in Alarm Clocks
Date First Available	January 27, 2021

Warranty & Support

Product Warranty: For warranty information about this product, please click here

Feedback

Would you like to **tell us about a lower price?**

Inspiration from this brand

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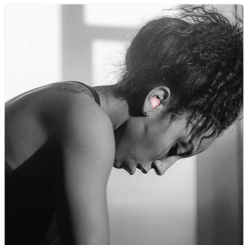
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Customer reviews

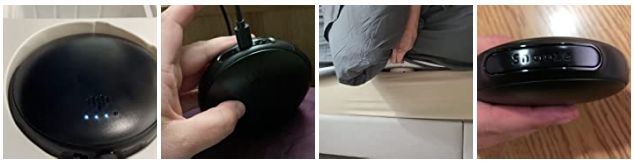
4.2 out of 5

980 global ratings

5 star	64%
4 star	13%
3 star	8%
2 star	6%
1 star	8%

How customer reviews and ratings work

Reviews with images



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Top reviews

Top reviews from the United States

goodgame

It actually wakes my daughter up!

Reviewed in the United States on February 20, 2022

Color: Black | Verified Purchase

It wakes my daughter up! She has a sleep disorder that causes her to sleep very deep and makes her near impossible to wake up. We tried loud alarm clocks, only to have complaints taken from college roommates because she would still sleep through them. She has the iLuv Smart Shaker 2 and it helped but only if she remembered to charge her phone. The Smart Shaker 3 has a significantly stronger vibration, it holds the alarm times and is not reliant on a phone being charged plus it can send notifications from texts or phone calls! It has the ability to turn on other app notifications too, such as continuous glucose monitor apps. The one downside is the switch on the side sticks up just enough that depending on the puck's placement the vibration can switch it off. She puts a piece of electric tape over it to ensure that doesn't happen. Overall, a great purchase!

7 people found this helpful

Helpful | Report abuse

Amazon Customer

Really works!!!

Reviewed in the United States on February 7, 2023

Color: Pink | Verified Purchase

I was in despair before I ordered the Smart Shaker 3; I have very serious hearing loss, use a CPAP machine, and I seem to need about 9 hours of sleep a night. I was sleeping through all the alarms on my phone, even when I was holding it to feel the vibrations. Alarm clocks have to be set to ear-damaging decibels to make a dent in my sleep time, and that wakes me up with an adrenaline rush and a pounding heart. Not a good way to start the day.

The Smart Shaker 3 is extremely easy to set up and I had high hopes that I'd found a solution. It allows me to set multiple alarms and set snooze intervals. I can also indicate which day or days of the week I want that particular alarm to go. I chose the vibration level, and also decided not to get a quick vibration as a

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notification of a text or email. A benefit of this alarm is that, once it's charged, it can go cordless for up to a week. I have a 3 day travel plan coming up—and I can take my wonderful alarm with me!

(I should mention that the Smart Shaker 3 goes underneath the pillow. I didn't feel it through the pillow until the alarm went off, nor did the vibration cause the alarm to move noticeably. In future, though, I think

4 people found this helpful

Helpful | Report abuse

Alex D.

★★★★☆ **I Love It, Fiancé.. Not As Much Haha**

Reviewed in the United States on June 29, 2022

Color: Pink | Verified Purchase

First off, these are better by lightyears than the deaf alarms of the past. Easy to set up, charge, use. A great batter life. Many variations in use and setting. Seamless App. It is all very intuitive.

What I will say is that I would recommend using the lower strength vibrations and don't use the SMS feature unless you truly need it. I accidentally had it set up to vibrate when my phone got a text or call and ended up violently buzzing my fiancé out of bed every time I got an alert. Oops. Don't worry we worked it out. 5/5 otherwise

4 people found this helpful

Helpful | Report abuse

karen

★★★★★ **Life changing**

Reviewed in the United States on March 14, 2023

Color: Black | Verified Purchase

Definitely recommend this product I have used the sonic alert alarm clock for 6+ years and this product has amazing battery life and allows me to not have an ugly alarm clock. Plus i used it while traveling. Must buy, truly life changing

Helpful | Report abuse

Rana

★★★☆☆ **It stopped working (edited - it started working again)**

Reviewed in the United States on February 2, 2023

Color: Pink | Verified Purchase

Edited to add the item started working again. There is a little toggle that is easy to toggle on and off. If the toggle is off then it won't work. I wished the toggle was harder to switch between on and off.

2 people found this helpful

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Paul Christy

★★★★★ **This alarm method works very well**

Reviewed in the United States on February 13, 2023

Color: Black | Verified Purchase

Now I have significant hearing loss, so this method alarm is best for me.

However, I had decades of experience with good hearing and used all the varieties of audio alarms.
So, comparing my experience, I add that this method works better in many cases.
It is smaller and much more portable and it awakens more effectively than sound without disturbing anyone else nearby.

Helpful | Report abuse

Matt Herold

★★★★★ **Awesome product**

Reviewed in the United States on August 13, 2022

Color: Black | Verified Purchase

I am hard of hearing and can't hear my iPhone ring when I take my hearing aids out. I rarely need something that I can rely on to wake me up if someone calls but I had a need, needed it quick, found this on Amazon and pulled the trigger.
I actually had one of these from about 5 years ago. I found it and plugged it in, charged it up but it is dead. I considered another brand because of this but Li ion batteries don't last forever, especially if they're used. The iLuv is less expensive than the other brand I found so I decided to give them another chance.
As someone else wrote in another review, this company seems to have been continually improving this product. It shows.
The shaker comes neatly packed in a box with nice, easy to read instructions. All I had to do is charge it a bit, turn on my iPhone and it paired with the app and bluetooth seamlessly. From there it is as easy as opening the app and either scheduling an alarm or just letting it do it's magic.
This thing actually and incredibly works for everything I need, which is, in order of importance, phone calls, Teams calls (most people these days work for companies where coworkers insist on calling you via Teams and not just your mobile number), and text.

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12 people found this helpful

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Top reviews from other countries

Translate all reviews to English

Trisch

Love it - a lot more stable since firmware update

Reviewed in Canada on December 1, 2021

Color: White | Verified Purchase

The app is not great, so if you have to change your alarm time often, it might be a sore point for you, but if you use the same time alarm on a set schedule, then that part won't bug you too much. You can set up to 3 alarms and each one you decide what time it goes off and what days of the week you want it to repeat (aka Mon-Fri).

Now for the really bad part though, which hopefully has been fixed by a recent firmware update they sent out (shaker updates via the app)... The shaker would randomly decide to stop responding. The only way to get it functioning again was to poke the reset hole, the lights would then flash red and it vibrates super loud and then it's awake again. Not great to have to do if you have someone else asleep nearby who has hearing.

And of course, the only way to see if it's functional is to edit an alarm time (at which point it will flash white to indicate data transfer), or flip the active trigger on and off (it's not an actual device on/off button, it just silences the device), and when you flip it back on, it lights up and vibrates, which again is disruptive if

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3 people found this helpful

Report abuse

Joc

Indispensable à la maison et en voyage

Reviewed in Canada on November 2, 2022

Color: Black | Verified Purchase

Très bon produit. Autonomie de batterie excellente, surtout si vous l'éteignez entre les utilisations.
Possibilité de configurer plusieurs alarmes à des heures différentes, sur plusieurs jours.
Applications mobile facile d'usage.
Réveil discret, sans déranger votre voisin de lit.
Je ne peux m'en passer.

Report abuse

Translate review to English

Andrea

Molto comodo con vibrazione potente

Reviewed in Italy on August 4, 2022

Color: Black | Verified Purchase

E' meno compatto del modello precedente però appare più affidabile e la vibrazione è molto più potente, confrontabile con i modelli alimentati con la presa di corrente. L'app funziona bene ed è semplice da usare

Report abuse

Translate review to English

Pc

At first loved it, now not so mucc.

Reviewed in Canada on October 10, 2021

Color: White | Verified Purchase

At first it Woke me up every time I got a msg or my phone rings which is important since I'm hard of hearing. NOW, less than three months later it stopped working, I reset it , as the seller suggested, and now I can hardly feel the shaking, even at the highest setting.

Report abuse

lorenzo

Costa troppo ma ne vale la pena

Reviewed in Italy on November 4, 2022

Color: Black | Verified Purchase

Doveva arrivare il 14 di novembre e invece mi è arrivato il 3 di novembre, soddisfatto per la consegna. Sono un ragazzo giovane sordo dalla nascita e devo dire che questa sveglia è ottima, facile da usare, ci sono 5 livelli per la vibrazione già il 1/2 livello non è ne basso è ne alto.

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Translate review to English

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patent-evaluation@amazon.com
Fri 12/23/2022 4:23 PM
To: Amazon BSN <amazon.bsn@bellman.com>

2 attachments (289 KB)
Amazon Patent Evaluation Express Procedure.pdf; JWIN ELECTRONICS CORP Executed Agreement.pdf;

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We received a report from a patent owner who believes the items listed at the end of this email infringe their U.S. Patent No. 10,713,929.

If you wish to continue selling the items listed at the end of the email, you have two choices.

First, you can choose to resolve your claim with the patent owner directly within the next three weeks. If we receive a retraction from the patent owner within the next three weeks, we will allow you to continue selling the items listed at the end of this email. The patent owner's contact information is as follows:

JWIN ELECTRONICS CORP
kongsik.kim@uonelaw.com
2 Harbor Park Drive Port Washington, NY 11050, USA

If the patent owner agrees to retract their complaint, they must send the retraction directly to us at patent-evaluation@amazon.com. Forwarded retractions will not be accepted. Another option is to resolve the claim with the patent owner in a federal district court case. If you are already engaged in a patent lawsuit with the patent owner, or if you file a lawsuit against the patent owner for declaratory judgment of non-infringement of the asserted patent, please provide us with a copy of the relevant complaint within the next three weeks, and you may continue selling the items listed at the end of the email while the lawsuit proceeds.

Second, you can choose to participate in neutral evaluation of the patent owner's claim. Amazon's neutral evaluation procedure is described in the attached document titled "Amazon Patent Evaluation Express Procedure." Please read this document carefully and note that payment of a deposit is required. If you choose to participate in the neutral evaluation, you must agree to the attached Amazon Patent Evaluation Express Agreement, complete Exhibit 2 of the Agreement, "Seller-Supplied Information," and return the completed Agreement to patent-evaluation@amazon.com within three weeks.

Please note that participation in the evaluation process does not guarantee that you will be able to continue to sell the items listed at the end of this email following the evaluation. If the evaluator decides that the items likely infringe, we intend to remove them from Amazon.com. If, however, the evaluator decides the items likely do not infringe, we will not remove your listings from Amazon.com,

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To learn more about this policy, search for “Intellectual Property Violations” in Seller Central Help.

ASIN: B082VHC69X
Infringement type: Patent
Patent Number: 10,713,929
Case ID: 11605517131

You can learn more about your account health in the Performance section of Seller Central (https://sellercentral.amazon.com/gp/seller-rating/pages/performance-summary.html).

Neutral Patent Evaluation Team
Amazon.com

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Amazon Patent Evaluation Express Procedure

To efficiently resolve claims that third-party product listings infringe utility patents, Amazon offers a simple, low-cost procedure called Amazon Patent Evaluation Express (APEX). APEX is voluntary, confidential, and allows owners of U.S. utility patents or their authorized representatives, such as attorneys or exclusive licensees ("Patent Owner") to obtain a fast evaluation of patent infringement claims against products ("Accused Products"), identified by Amazon Standard Identification Number, listed by third-party sellers ("Sellers") on amazon.com ("Evaluation"). In APEX, a neutral evaluator reviews a patent infringement claim against third-party product listings on amazon.com. The evaluator will make a yes/no decision about whether the patent covers the product listings. The evaluator may decide that the patent does not cover the product listings because: they do not infringe (i.e., include all elements of the asserted claim); a court has found the patent invalid or unenforceable; or the accused products (or physically identical products) were on sale more than one year before the earliest effective filing date of the patent. Amazon will comply with the evaluator's decision pending any litigation or settlement between the patent owner and Sellers, or other legal proceedings that may impact the patent. If there is litigation pending on a patent subject to a proposed or pending Evaluation, Amazon may decide not to initiate or suspend an Evaluation until the completion of that litigation.

If an evaluator concludes that an Accused Product is covered by a patent, Amazon will remove that Accused Product from www.amazon.com. The cost of the Evaluation is $4,000 and covers the Evaluator's expenses; Amazon will not retain any portion of the cost. The cost will be paid by the participant(s) losing the Evaluation in the event an Evaluation actually occurs.

1. Starting an Evaluation. To request an Evaluation, a Patent Owner submits an APEX Agreement ("Agreement") to Amazon, with all information requested in its Exhibit 1. Amazon then sends that Agreement to each Seller listing Accused Products and gives each the option of: (i) executing and returning the Agreement within three weeks, with all information requested in its Exhibit 2; or (ii) having their listings on Accused Products removed from www.amazon.com. If a Seller does not participate in the Evaluation or does not comply with the Agreement, Amazon intends to remove its listings of Accused Products. After receiving a completed Agreement from one or more Sellers, Amazon will use the information in Exhibits 1 and 2 of the Agreement to select a neutral individual from a list of attorneys experienced in U.S. patent disputes ("Evaluator"). It is critical that each of Exhibits 1 and 2 be filled out completely, including with the full corporate names of each Participant, as well as all of their related companies, so that Amazon can select a neutral evaluator.

2. Payment and Schedule. Once an Evaluator is selected, Amazon will contact the Patent Owner and each Seller with instructions to wire $4,000 to the Evaluator. When wiring the $4,000, a party should identify in the wire transmittal the evaluation number and the name of the Participant in the evaluation for which the payment is being made. Each Participant should also email the Evaluator with the confirmation number for the wire once it has been sent. If the Patent Owner does not submit $4,000 to the Evaluator within one week, no Evaluation will occur and any money submitted by Sellers will be returned. If a Seller does not submit $4,000 within one week, the Evaluator will notify Amazon, who will then remove that Seller's listings of Accused Products. If no Seller submits $4,000, Amazon will remove all Sellers' listings of the Accused Products and the Evaluator will return the Patent Owner's payment.

3. Submission of Written Arguments. After the Patent Owner and a Seller have timely submitted $4,000, the Evaluator will set a schedule for submission of written arguments ("Schedule"). In general, the Schedule will provide: (i) the Patent Owner with 14 days for its initial arguments; (ii) Sellers with 14 days to respond; and (iii)

the Patent Owner with 7 days to reply. Modifications to the schedule can be requested for good cause only. The Patent Owner may use a total of 20 double-spaced 8.5 x 11" pages between its two submissions. Each Seller may use 15 double-spaced pages in its response. Claim charts and exhibits are not counted against page limits. Each submission must be in English and emailed to the Evaluator and to the opposing Participants in the same email; physical exhibits cannot be submitted. Failure to timely make a submission by a Participant will generally result in a finding by the Evaluator against that Participant and forfeiture of its payment, except that the Patent Owner may waive reply. In appropriate circumstances, the Evaluator may request that the Participants answer discrete questions that will aid the Evaluator in the Evaluator's determination, and the Evaluator may extend the schedule and briefing limits modestly to enable the Participants to answer such questions.

4. Evaluation is a Limited Procedure. To make the Evaluation fast, efficient, and relatively low-cost, it is limited to one claim from one unexpired U.S. utility patent. Design, non-U.S., and expired patents are not eligible. The Patent Owner may include up to 20 ASINs in an Evaluation. If a Patent Owner lists more than 20 ASINs in Exhibit 1 to the Agreement, Amazon may in its sole discretion reduce the Patent Owner's list to 20 ASINs.

Amazon or the Evaluator may exclude ASINs of Accused Products not physically identical for purposes of the Evaluation. When excluding ASINs, the Evaluator will notify Amazon as well as the Patent Owner and implicated Sellers of the excluded ASINs, while also giving the Patent Owner and the implicated Sellers a time deadline and parameters for submitting their respective arguments for and against inclusion of the excluded ASINs. Each of the Patent Owner and Sellers have the option, in their sole discretion, whether or not to submit their respective arguments. The Evaluator will consider submitted arguments, if any, in deciding finally on excluding the ASINs. The Evaluator will communicate to the Participants whether any ASINs have been excluded and if so, which ones.

If Evaluator's exclusion of ASINs results in any of the Sellers having no remaining products in the Evaluation, the Evaluator will return those Sellers' $4000 payments, those Sellers will no longer be Participants in the Evaluation, and the Evaluator will not consider those Sellers' respective responsive arguments, if any.

The Evaluation will address only Accused Products sold solely by third-party sellers on www.amazon.com. The Evaluator will consider whether a Product likely infringes. The process is intended to evaluate the Accused Products in the listings on the date ("Complaint Date") that the Patent Owner executed the Evaluation Agreement. Any manipulation of the Accused Products, or any manipulation of the listings on amazon.com for Accused Products, after the Complaint Date by a participating Seller will be grounds for the Evaluator to find for the Patent Owner and/or for Amazon to remove the listing of that Seller. Any Seller making such a change may lose all (or part, if there is more than one losing Seller) of its $4,000 in accordance with Section 6, below.

Amazon reserves the right to terminate an Evaluation at any time, if Amazon determines that a participant has acted improperly in connection with that Evaluation. Such conduct may include: failure to follow this Procedure; failure to abide by the terms of the Agreement; incorrectly filling out an Agreement; providing false information to Amazon or the Evaluator; or any other action that Amazon determines is fraudulent or a misuse of the Evaluation procedure. In addition to terminating an Evaluation for such conduct, Amazon may take down ASINs, prohibit future sales of products, prohibit future filings of Evaluations, and encourage an Evaluator to enter a decision against that participant.

If more than four Sellers opt in and make the required $4,000 deposit in a single Evaluation case, the Evaluator will give the Patent Owner the option of: (i) limiting the Evaluation so that it applies to no more than four Sellers; or (ii) making one or more additional payments to the Evaluator so that multiple concurrent Evaluations can take

place, each with no more than four Sellers. If the Patent Owner decides to limit the Evaluation to four Sellers and not to proceed in concurrent evaluations against the remaining sellers that opted in and made timely deposits, the Evaluator will return the $4,000 payments to those Sellers who have not been chosen by the Patent Owner to continue in the Evaluation. The Evaluation will then proceed with four sellers. At the completion of the Evaluation, the Patent Owner may institute one or more additional Evaluations against the other Sellers that opted in, which Amazon intends to have proceed with the same Evaluator as the first Evaluation to minimize the chances of inconsistent results. If the Patent Owner decides to conduct Evaluations against more than four Sellers, the Patent Owner must pay to the Evaluator $4,000 for each additional Evaluation that will be conducted. Once those payments have been made, the Evaluations will be conducted generally in parallel, with the Evaluator setting a schedule for each and limiting communications for each Evaluation to the Patent Owner and the Sellers involved in that Evaluation. If the Patent Owner does not make an election within one week of notice from the Evaluator that more than four sellers have opted in of whether to proceed against only four Sellers or to conduct multiple Evaluations, no Evaluation will proceed and the Evaluator will return the payments of all parties.

Only two defenses other than non-infringement based on failure to meet one or more claim limitations will be considered by the Evaluator. First, Sellers can defend on the basis of invalidity and/or unenforceability of the asserted patent claim by providing a finding by a court of competent jurisdiction, or by the U.S. Patent Office or U.S. International Trade Commission ("ITC"), that the asserted patent claim is invalid or unenforceable. Arguments regarding, for example, invalidating prior art will not be accepted; the only way Sellers can show invalidity/unenforceability is by presenting a court, Patent Office, or ITC order finding an asserted patent claim invalid or unenforceable. Second, Sellers may show that the Accused Products (or physically identical products) were on sale one year or more before the asserted patent's earliest effective filing date, only by using credible evidence that the Evaluator can independently observe (such as a date of sale on amazon.com, or on the Wayback Machine). The Evaluator will not accept affidavits, declarations, or mere arguments about the date of a sale; the Seller must come forward with independently verifiable objective evidence that the Evaluator can confirm.

The Evaluator will consider infringement under the doctrine of equivalents only if the Patent Owner argues for infringement under the doctrine in its opening brief. Doctrine of equivalents arguments made for the first time in a reply brief will not be considered by the Evaluator.

No discovery (*e.g.*, depositions, document requests, etc.) will occur in the Evaluation**,** nor will there be a trial or hearing. The Patent Owner and Sellers may not contact the Evaluator, unless by email in response to an inquiry from the Evaluator, while copying the other parties. The Evaluator may consider any information submitted, giving any weight to that information the Evaluator believes appropriate.

5. Decision. Within 14 days of the reply date, the Evaluator will announce a decision, choosing between: (i) the Patent Owner is likely to prove that the Accused Product infringes the asserted claim; or (ii) the Patent Owner is not likely to prove that the Accused Product infringes the asserted claim. The Evaluator will not provide reasoning if the Evaluator decides that the Patent Owner is likely to prove that the Accused Product infringes the asserted claim, although the Evaluator may provide a brief explanation of how certain claim terms were construed where appropriate. If the Evaluator decides that Patent Owner is not likely to prove that the Accused Product infringes, the Evaluator shall provide a brief explanation of why the Patent Owner is unlikely to prove infringement. The Participants will not contact or question the Evaluator regarding his or her decision. There is no process for

reconsideration of the Evaluator's decision, though either side may appeal to Amazon by providing a court order that conflicts with the Evaluator's decision concerning invalidity or infringement.

6. Disposition of Payments Following Evaluation. If the Evaluator decides the Patent Owner is likely to prove that all Accused Products infringe, the Evaluator will return the Patent Owner's $4,000 and retain a total of $4,000 divided evenly among the participating Sellers. If more than one Seller has participated and is found to infringe, the Evaluator will give any amount of money deposited from losing Sellers in excess of $4,000 to an Amazon Smile charity chosen by the Patent Owner. If the Evaluator decides the Patent Owner is not likely to prove that any Accused Product infringes, the Evaluator will return participating Sellers' payments and retain the Patent Owner's $4,000. If the Evaluator decides the Patent Owner is likely to prove that some Accused Products infringe and not likely to prove that other Accused Products infringe, the Evaluator will: (i) retain $2,000 from the Patent Owner's payment and return the remainder; (ii) return in full payments of participating Sellers whose Accused Products were found not to infringe; and (iii) retain $2,000, divided evenly among participating Sellers of Accused Products found to infringe. Any excess funds from Sellers of Accused Products found to infringe shall be given to an Amazon Smile charity chosen by the Patent Owner. In no case may the Evaluator retain more than $4,000 after making a merits decision in an Evaluation.

If the Patent Owner and a Seller reach a settlement after Seller's listings have been taken down in connection with an Evaluation, and Patent Owner has agreed to reinstatement of the listings, the Participants may contact Amazon at patent-evaluation@amazon.com for information about the reinstatement process

7. Settlement or Patent Owner Retraction. If the Patent Owner and a Seller notify the Evaluator they have settled their dispute prior to the date of Patent Owner's reply, the Evaluator will terminate the Evaluation as to that Seller, or terminate the Evaluation entirely if there is only one participating Seller. The Evaluator may retain up to $1,000 to cover the Evaluator's efforts, equally divided from the Participants' payments when settlement results in termination of the entire Evaluation. If the settlement occurs after the Patent Owner's reply but before the Evaluation is completed, the Evaluator may retain up to $2,000, $1,000 from the Patent Owner and a total of $1,000 from the participating Sellers, if the Evaluation is terminated in its entirety. The Evaluator will return the remainder of each Participant's payment to that Participant. If the Patent Owner retracts or withdraws its claims of infringement against one or more Participants such that the retraction or withdrawal of claims by the Patent Owner results in no further claims of infringement to evaluate, the Evaluator will terminate the Evaluation. If the Patent Owner retracts or withdraws its claims of infringement such that the Evaluation is terminated pursuant to the preceding sentence before briefing begins, the Evaluator may retain $500 from the Patent Owner; the Evaluator must return the remainder of the Patent Owner's deposit and all Seller deposits. If the Patent Owner retracts or withdraws its claims of infringement such that no claims remain to be evaluated during briefing, the Evaluator may retain $1,000 from the Patent Owner; the Evaluator must return the remainder of the Patent Owner's deposit and all Seller deposits. If the Patent Owner retracts or withdraws its claims of infringement such that no claims remain to be evaluated after briefing has completed but before the Evaluator has announced a decision, the Evaluator may retain $2,000 from the Patent Owner; the Evaluator must return the remainder of the Patent Owner's deposit and all Seller deposits.

8. Effect of Evaluation. If the Evaluator finds the Patent Owner is likely to prove that an Accused Product infringes, Amazon will remove that Accused Product from www.amazon.com as soon as practicable, but generally within 10 business days of Amazon's receipt of the decision. If the Evaluator finds that the Patent Owner is not likely to prove that an Accused Product infringes, Amazon will have no obligation to take any action as a

result of the Evaluation. No other action is contemplated or required as a result of the Evaluation and no damages, attorney's fees or costs may be awarded.

If any Participant obtains a judgment or order in litigation or an arbitration that an Accused Product does not infringe or that the Patent is invalid or unenforceable, that Participant may submit it to Amazon, and Amazon may allow relisting of the Accused Product, in accordance with Amazon's policies and procedures. When a patent expires or is found invalid or unenforceable, Amazon may restore a removed listing. If the Evaluator finds that the Patent Owner is not likely to prove an Accused Product infringes, and the Patent Owner subsequently obtains an order or judgment finding that the Accused Product infringes, the Patent Owner may submit that judgment or order to Amazon, and Amazon will remove the Accused Product, in accordance with Amazon's policies and procedures. Amazon reserves the right to use and disclose the results of an Evaluation in connection with actual or proposed Evaluations, requests for takedown of ASINs, in response to statements of others about an Evaluation, or otherwise in connection with Amazon's business.

If the Patent Owner and a Seller reach a settlement after Seller's listings have been taken down in connection with an Evaluation, and Patent Owner has agreed to reinstatement of the listings, the Participants may contact Amazon at patent-evaluation@amazon.com for information about the reinstatement process.

Amazon Patent Evaluation Express Agreement

This Amazon Patent Evaluation Express (APEX) Agreement ("Agreement") is between the Patent Owner (or Patent Owner's authorized representative) listed in Exhibit 1 and the Seller or Sellers (or their authorized representative(s)) listed in Exhibit 2 (collectively, "Participants").

Amazon.com, Inc. ("Amazon") has developed the APEX Procedure ("Procedure") for owners of United States utility patents to obtain an evaluation of their patent infringement claims against products offered by third-party sellers on amazon.com ("Evaluation"). By executing this agreement, the Patent Owner represents and warrants that it owns or has the right to enforce the patent identified in Exhibit 1 ("Patent"), and asserts that listings identified by the Amazon Standard Identification Numbers ("ASINs") in Exhibit 1 ("Products") infringe the patent claim identified in Exhibit 1.

By respectively executing Exhibits 1 and 2, Patent Owner and Seller agree as follows:

1. Following the Evaluation Procedure. Patent Owner and Seller have reviewed and agree to comply with the Procedure, which is incorporated herein by reference. Patent Owner agrees to accurately complete Exhibit 1, and Seller agrees to accurately complete Exhibit 2. Both Exhibits 1 and 2 are incorporated herein by reference.

2. Confidentiality; No Discovery. Participants agree not to disclose to third parties information or documents learned from other Participants, Amazon, or Evaluator in the Evaluation, except to their respective affiliates, legal counsel or as required by law; provided, however, that the fact that an Accused Product and ASIN (identified in Exhibit 1) was either removed or not as a result of an Evaluation, and the identity of the patent claim in that Evaluation, shall not be considered confidential. Participants agree that receipt or disclosure of any information relating to patents in APEX may not be used in court or any agency proceeding to establish notice of patent infringement, knowledge of any patent, or to establish damages. Participants agree not to seek discovery from other Participants, Amazon, or Evaluator relating to the Evaluation in any litigation, arbitration, or agency proceeding.

3. Waiver of Claims. Participants acknowledge and agree that neither Amazon nor Evaluator shall be liable for any claims arising out of the Procedure or Evaluation, and Participants hereby waive any claims (including claims that are unknown or are based on activities that have not yet occurred) against Amazon or Evaluator relating to the Procedure or Evaluation; provided that, the foregoing shall not be deemed to waive any rights or claims of a Participant to receive a refund of amounts paid by a Participant that should be returned to a Participant pursuant to the rules of the Procedure. Participants agree that Amazon's liability to any Participant relating to the Evaluation is limited to any payment made by that Participant to the Evaluator. Participants agree not to sue Amazon or its affiliates for infringement of the Patent with respect to the ASINs listed on Exhibit 1 or materially identical products. Nothing in this Agreement shall limit a Participant's ability to sue any Seller or other third party for infringement of the Patent.

4. Updating Participant's Information. Contact during the Evaluation will occur through the email addresses listed in Exhibits 1 and 2. It is each Participant's responsibility to ensure that its email address and other information in Exhibits 1 and 2 remain accurate and current.

5. General Matters. This Agreement shall be governed by the laws of the state of Washington, USA, and Participants agree to the jurisdiction and venue of the federal and state courts located in King County, Seattle, Washington. Any dispute regarding this Agreement may be submitted to the Evaluator, and if not resolved by the Evaluator may only be resolved by Amazon, in its sole discretion. Participants may not assign their rights or obligations under this Agreement. This Agreement does not create any partnership or any fiduciary relationship between or among the Participants, the Evaluator and Amazon. No third party is intended to be a beneficiary of this Agreement, except that the parties agree and acknowledge that the Evaluator and Amazon are third- party beneficiaries of Sections 2 and 3 of this Agreement. This Agreement and the APEX Procedure are the entire agreement for the Evaluation and supersede any prior agreements related to the Evaluation.

Exhibit 1: Patent Owner-Supplied Information

Patent Owner name: JWIN ELECTRONICS CORP

Patent Owner physical address: 2 Harbor Park Drive Port Washington, NY 11050, USA

Names of any corporate parents, subsidiaries, or other entities related to Patent Owner:

iLuv Creative Technology

Name of individual contact for Patent Owner or Patent Owner's authorized representative:

Kongsik Kim

Is Patent Owner registered in Amazon's Brand Registry? If yes, please identify the brand(s) registered in Brand Registry:

iLuv

Email Address for contact (this email address will be used by the Evaluator and Amazon for communications related to the Evaluation): kongsik.kim@uonelaw.com

United States utility patent number ("Asserted Patent") for Evaluation: 10713929

Patent Claim number for Evaluation: 1

Amazon Standard Identification Numbers (ASINs) of Accused Products:

B09KKTZCKS	B082VHC69X	B07XJYRYTZ	B01LY2OYQJ	

Signature: /K. Kim/

Name: Kongsik Kim

Title: Attorney of record

Date: 12/23/2022

Exhibit 2: Seller-Supplied Information

Seller name:

Seller physical address:

Names of any corporate parents, subsidiaries, or other entities related to Seller:

Name of individual contact for Seller or Seller's authorized representative:

Email Address for contact (this email address will be used by the Evaluator and Amazon for communications related to the Evaluation):

Amazon Standard Identification Numbers (ASINs) of Accused Products for which Seller will participate in the Evaluation:

Signature: _____

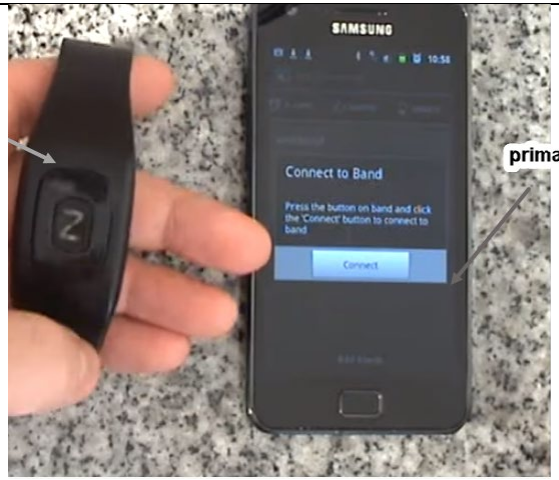
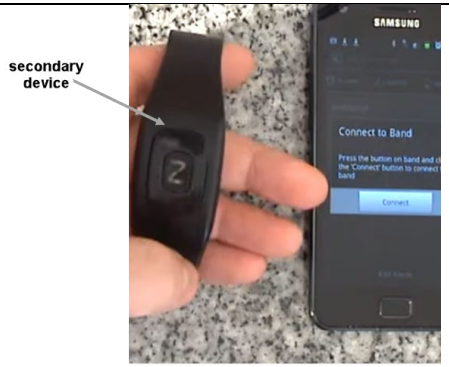
Name: _____

Title: _____

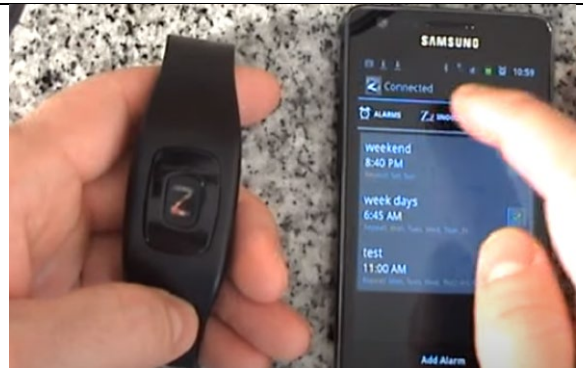
Date: _____

EXHIBIT H

U.S. Patent No. 10,713,929

Claim	ZBand
1. An alarm system comprising:	
a primary device having a first controller; and	 Smart phone has a controller
at least one secondary device having at least one secondary controller and at least one rendering device;	 Secondary device is ZBand, capable of saving alarms and generating alarms by vibrating when the time is reached. Therefore controller is inherent.

U.S. Patent No. 10,713,929

wherein the first controller is configured to	
(i) determine whether at least one alarm event is set on the primary device,	 Multiple alarms may be set. Primary device determines whether an alarm is set.
(ii) establish a wireless communication between the primary device and the secondary device when determination is made that the alarm event has been set on the primary device,	First controller can connect phone (primary device) wirelessly to the ZBand (secondary device) by pressing the z-button on the ZBand. This can be done at any time, including when determination is made that an alarm event has been set.
(iii) generate a first alarm signal including first alarm rendering instructions based on the alarm event set, and	User can set an alarm using the primary device including time, days of week, snooze function and vibration strength. Signal is generated by hitting the “save alarm” button.
(iv) transmit the first alarm signal including the first alarm rendering instructions from the primary device to the secondary device, and	Hitting the “save alarm” button while the devices are connected transmits the alarm signal including alarm rendering instructions to the ZBand. The ZBand vibrates to indicate that the alarm signal has been received and is being saved on the ZBand .
wherein the secondary controller is configured to	
(i) generate second alarm rendering instructions for the rendering device based on the first alarm rendering instructions and	A controller in the ZBand generates a signal including rendering instructions for sending to the vibration unit.
(ii) render the second alarm rendering instructions on the rendering device.	The vibration unit on the ZBand vibrates when the alarm time is reached.

U.S. Patent No. 10,713,929

9. A method of operating an alarm and monitoring system comprising:	
determining by a first controller on a primary device whether at least one alarm event is set on the primary device;	 Multiple alarms may be set. Primary device determines whether an alarm is set.
after determining the alarm event is set, establishing by the first controller communication between the primary device and a secondary device;	First controller can connect phone (primary device) wirelessly to the ZBand (secondary device) by pressing the z-button on the ZBand. This can be done at any time, including after determination is made that an alarm event has been set.
generating by the first controller a first alarm signal including first alarm rendering instructions based on the alarm event set;	User can set an alarm using the primary device including time, days of week, snooze function and vibration strength. Signal is generated by hitting the “save alarm” button.
transmitting the first alarm signal including the first alarm rendering instructions from the primary device to the secondary device;	A signal including information about the alarm (time, days, vibration strength) is transmitted from primary to secondary.
generating by a secondary controller on the secondary device second alarm rendering instructions for a rendering device based on the first alarm rendering instructions; and	A controller in the ZBand generates a signal including rendering instructions for sending to the vibration unit.
rendering the second alarm rendering instructions on the rendering device.	The vibration unit on the ZBand vibrates.

EXHIBIT I

US008812259B2

(12) **United States Patent**
Messenger et al.

(10) **Patent No.: US 8,812,259 B2**
(45) **Date of Patent: Aug. 19, 2014**

(54) **ALARM SETTING AND INTERFACING WITH GESTURE CONTACT INTERFACING CONTROLS**

(71) Applicant: **Fitbit, Inc.**, San Francisco, CA (US)

(72) Inventors: **Jayson Messenger**, San Francisco, CA (US); **Shelten Yuen**, Berkeley, CA (US)

(73) Assignee: **FitBit, Inc.**, San Francisco, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/050,305**

(22) Filed: **Oct. 9, 2013**

(65) **Prior Publication Data**

US 2014/0036643 A1 Feb. 6, 2014

Related U.S. Application Data

(60) Continuation-in-part of application No. 13/959,714, filed on Aug. 5, 2013, now Pat. No. 8,762,101, which is a continuation-in-part of application No. 13/693,334, filed on Dec. 4, 2012, now Pat. No. 8,548,770, which is a division of application No. 13/667,229, filed on Nov. 2, 2012, now Pat. No. 8,437,980, which is a division of

(Continued)

(51) **Int. Cl.**

G06F 19/00	(2011.01)
A61B 5/00	(2006.01)
G04G 13/02	(2006.01)
A63B 71/06	(2006.01)
G01C 22/00	(2006.01)
G06F 15/00	(2006.01)
A63B 24/00	(2006.01)
A61B 5/11	(2006.01)
A61B 5/22	(2006.01)
A61B 5/024	(2006.01)
A61B 5/0205	(2006.01)

(52) **U.S. Cl.**

CPC ***G04G 13/021*** (2013.01); *A61B 5/1112* (2013.01); *A61B 5/222* (2013.01); ***A61B 5/6838*** (2013.01); *A63B 2230/75* (2013.01); *A63B 2230/50* (2013.01); *A61B 2560/0214* (2013.01); *A63B 2230/70* (2013.01); ***A63B 71/0686*** (2013.01); *A61B 5/02405* (2013.01); *A61B 2562/0219* (2013.01); ***A61B 5/0002*** (2013.01); *A61B 2560/0242* (2013.01); *A61B 5/02055* (2013.01); *G06F 19/3481* (2013.01); *A63B 2220/72* (2013.01); ***G01C 22/00*** (2013.01); *A61B 5/4812* (2013.01); *G06F 19/3406* (2013.01); ***G06F 15/00*** (2013.01); *A61B 5/4815* (2013.01); *A63B 2220/73* (2013.01); ***A61B 5/1118*** (2013.01); ***A63B 24/0062*** (2013.01); *A63B 2230/06* (2013.01); ***G01C 22/006*** (2013.01)

USPC **702/160**

(58) **Field of Classification Search**

CPC G06F 19/3406; G06F 19/3456; A61B 5/4532; A61B 5/743; A61B 5/14865

USPC 702/160, 150, 155, 182–185, 188

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,284,849 A	8/1941	Anderson et al.
2,717,736 A	9/1955	Schlesinger

(Continued)

FOREIGN PATENT DOCUMENTS

JP	11347021	12/1999
WO	WO 2008/038141	4/2008
WO	WO 2009/042965	4/2009

OTHER PUBLICATIONS

"Automatic classification of ambulatory movements and evaluation of energy consumptions utilizing accelerometers and barometer", Ohtaki, et al, Microsystem Technologies, vol. 11, No. 8-10, Aug. 2005, pp. 1034-1040.

(Continued)

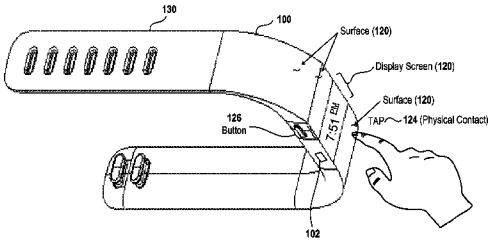
Primary Examiner — Edward Raymond

(74) *Attorney, Agent, or Firm* — Martine Penilla Group, LLP

(57) **ABSTRACT**

A device configured for capture of activity data for a user includes a housing, a sensor, a motor, a memory, and a processor. The sensor is disposed in the housing to capture physical contact upon the housing. The motor causes vibration of the housing. The memory stores an alarm setting that defines a time of day for triggering an alarm on the device. The processor activates the alarm upon reaching the time of day defined by the alarm setting, with the alarm causing the motor to produce the vibration of the housing. The sensor, which is interfaced with the processor, is configured to detect a physical contact upon the housing. The processor is configured to deactivate the alarm if the physical contact qualifies as an input to deactivate the alarm. The deactivating of the alarm causes the vibration of the device to be suspended.

25 Claims, 10 Drawing Sheets



Related U.S. Application Data

application No. 13/469,027, filed on May 10, 2012, now Pat. No. 8,311,769, which is a division of application No. 13/246,843, filed on Sep. 27, 2011, now Pat. No. 8,180,591, which is a division of application No. 13/156,304, filed on Jun. 8, 2011, said application No. 13/959,714 is a continuation-in-part of application No. 13/759,485, filed on Feb. 5, 2013, now Pat. No. 8,543,351, which is a division of application No. 13/667,229, filed on Nov. 2, 2012, now Pat. No. 8,437,980, which is a division of application No. 13/469,027, filed on May 10, 2012, now Pat. No. 8,311,769, which is a division of application No. 13/246,843, filed on Sep. 27, 2011, now Pat. No. 8,180,591, which is a division of application No. 13/156,304, filed on Jun. 8, 2011.

(60) Provisional application No. 61/388,595, filed on Sep. 30, 2010, provisional application No. 61/390,811, filed on Oct. 7, 2010, provisional application No. 61/886,000, filed on Oct. 2, 2013.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,883,255	A	4/1959	Anderson
3,163,856	A	12/1964	Kirby
3,250,270	A	5/1966	Bloom
3,918,658	A	11/1975	Beller
4,192,000	A	3/1980	Lipsey
4,244,020	A	1/1981	Ratcliff
4,281,663	A	8/1981	Pringle
4,312,358	A	1/1982	Barney
4,367,752	A	1/1983	Jimenez et al.
4,390,922	A	6/1983	Pelliccia
4,407,295	A	10/1983	Steuer et al.
4,575,804	A	3/1986	Ratcliff
4,578,769	A	3/1986	Frederick
4,617,525	A	10/1986	Lloyd
4,977,509	A	12/1990	Pitchford et al.
5,058,427	A	10/1991	Brandt
5,224,059	A	6/1993	Nitta et al.
5,295,085	A	3/1994	Hoffacker
5,323,650	A	6/1994	Fullen et al.
5,446,705	A	8/1995	Haas et al.
5,456,648	A	10/1995	Edinburg et al.
5,583,776	A	12/1996	Levi et al.
5,671,162	A	9/1997	Werbin
5,704,350	A	1/1998	Williams, III
5,724,265	A	3/1998	Hutchings
5,890,128	A	3/1999	Diaz et al.
5,891,042	A	4/1999	Sham et al.
5,899,963	A	5/1999	Hutchings
5,947,868	A	9/1999	Dugan
5,955,667	A	9/1999	Fyfe
5,976,083	A	11/1999	Richardson et al.
6,018,705	A	1/2000	Gaudet et al.
6,077,193	A	6/2000	Buhler et al.
6,129,686	A	10/2000	Friedman
6,145,389	A	11/2000	Ebeling et al.
6,183,425	B1	2/2001	Whalen et al.
6,213,872	B1	4/2001	Harada et al.
6,241,684	B1	6/2001	Amano et al.
6,287,262	B1	9/2001	Amano et al.
6,301,964	B1	10/2001	Fyfe et al.
6,302,789	B2	10/2001	Harada et al.
6,305,221	B1	10/2001	Hutchings
6,309,360	B1	10/2001	Mault
6,469,639	B2	10/2002	Tanenhaus et al.
6,478,736	B1	11/2002	Mault
6,513,381	B2	2/2003	Fyfe et al.
6,513,532	B2	2/2003	Mault et al.
6,529,827	B1	3/2003	Beason et al.
6,561,951	B2	5/2003	Cannon et al.
6,571,200	B1	5/2003	Mault
6,585,622	B1	7/2003	Shum et al.
6,607,493	B2	8/2003	Song
6,620,078	B2	9/2003	Pfeffer
6,678,629	B2	1/2004	Tsuji
6,699,188	B2	3/2004	Wessel
6,761,064	B2	7/2004	Tsuji
6,790,178	B1	9/2004	Mault et al.
6,808,473	B2	10/2004	Hisano et al.
6,811,516	B1	11/2004	Dugan
6,813,582	B2	11/2004	Levi et al.
6,813,931	B2	11/2004	Yadav et al.
6,856,938	B2	2/2005	Kurtz
6,862,575	B1	3/2005	Anttila et al.
7,062,225	B2	6/2006	White
7,162,368	B2	1/2007	Levi et al.
7,171,331	B2	1/2007	Vock et al.
7,200,517	B2	4/2007	Darley et al.
7,261,690	B2	8/2007	Teller et al.
7,272,982	B2	9/2007	Neuhauser et al.
7,373,820	B1	5/2008	James
7,443,292	B2	10/2008	Jensen et al.
7,457,724	B2	11/2008	Vock et al.
7,505,865	B2	3/2009	Ohkubo et al.
7,653,508	B1	1/2010	Kahn et al.
7,690,556	B1	4/2010	Kahn et al.
7,713,173	B2	5/2010	Shin et al.
7,774,156	B2	8/2010	Niva et al.
7,789,802	B2	9/2010	Lee et al.
7,881,902	B1	2/2011	Kahn et al.
7,927,253	B2	4/2011	Vincent et al.
7,983,876	B2	7/2011	Vock et al.
8,055,469	B2	11/2011	Kulach et al.
8,177,260	B2	5/2012	Tropper et al.
8,180,591	B2	5/2012	Yuen et al.
8,180,592	B2	5/2012	Yuen et al.
8,311,769	B2	11/2012	Yuen et al.
8,311,770	B2	11/2012	Yuen et al.
8,386,008	B2	2/2013	Yuen et al.
8,437,980	B2	5/2013	Yuen et al.
8,463,576	B2	6/2013	Yuen et al.
8,463,577	B2	6/2013	Yuen et al.
8,543,185	B2	9/2013	Yuen et al.
8,543,351	B2	9/2013	Yuen et al.
8,548,770	B2	10/2013	Yuen et al.
8,583,402	B2	11/2013	Yuen et al.
2001/0055242	A1	12/2001	Deshmukh et al.
2002/0013717	A1	1/2002	Ando et al.
2002/0077219	A1	6/2002	Cohen et al.
2002/0082144	A1	6/2002	Pfeffer
2002/0109600	A1	8/2002	Mault et al.
2002/0178060	A1	11/2002	Sheehan
2002/0198776	A1	12/2002	Nara et al.
2003/0018523	A1	1/2003	Rappaport et al.
2003/0050537	A1	3/2003	Wessel
2003/0065561	A1	4/2003	Brown et al.
2003/0131059	A1	7/2003	Brown et al.
2004/0054497	A1	3/2004	Kurtz
2004/0117963	A1	6/2004	Schneider
2004/0152957	A1	8/2004	Stivoric et al.
2005/0037844	A1	2/2005	Shum et al.
2005/0038679	A1	2/2005	Short
2005/0054938	A1	3/2005	Wehman et al.
2005/0102172	A1	5/2005	Sirmans, Jr.
2005/0107723	A1	5/2005	Wehman et al.
2005/0228692	A1	10/2005	Hodgdon
2005/0234742	A1	10/2005	Hodgdon
2005/0272564	A1	12/2005	Pyles et al.
2006/0020177	A1	1/2006	Seo et al.
2006/0025282	A1	2/2006	Redmann
2006/0047208	A1	3/2006	Yoon
2006/0047447	A1	3/2006	Brady et al.
2006/0089542	A1	4/2006	Sands

(56) **References Cited**

U.S. PATENT DOCUMENTS

2006/0111944	A1	5/2006	Sirmans, Jr. et al.
2006/0129436	A1	6/2006	Short
2006/0143645	A1	6/2006	Vock et al.
2006/0277474	A1	12/2006	Robarts et al.
2006/0282021	A1	12/2006	DeVaul et al.
2006/0287883	A1	12/2006	Turgiss et al.
2007/0050715	A1	3/2007	Behar
2007/0051369	A1	3/2007	Choi et al.
2007/0123391	A1	5/2007	Shin et al.
2007/0136093	A1	6/2007	Rankin et al.
2007/0155277	A1	7/2007	Amitai et al.
2007/0179356	A1	8/2007	Wessel
2008/0093838	A1	4/2008	Tropper et al.
2008/0140338	A1	6/2008	No et al.
2009/0018797	A1	1/2009	Kasama et al.
2009/0043531	A1	2/2009	Kahn et al.
2009/0048044	A1	2/2009	Oleson et al.
2009/0171788	A1	7/2009	Tropper et al.
2011/0003665	A1	1/2011	Burton et al.
2011/0009051	A1	1/2011	Khedouri et al.
2011/0022349	A1	1/2011	Stirling et al.
2011/0106449	A1	5/2011	Chowdhary et al.
2011/0131005	A1	6/2011	Ueshima et al.
2012/0072165	A1	3/2012	Jallon
2012/0083705	A1	4/2012	Yuen et al.
2012/0083714	A1	4/2012	Yuen et al.
2012/0083715	A1	4/2012	Yuen et al.
2012/0083716	A1	4/2012	Yuen et al.
2012/0084053	A1	4/2012	Yuen et al.
2012/0084054	A1	4/2012	Yuen et al.
2012/0226471	A1	9/2012	Yuen et al.
2012/0226472	A1	9/2012	Yuen et al.
2012/0227737	A1*	9/2012	Mastrototaro et al. ... 128/203.14
2012/0265480	A1	10/2012	Oshima
2012/0330109	A1	12/2012	Tran
2013/0006718	A1	1/2013	Nielsen et al.
2013/0073254	A1	3/2013	Yuen et al.
2013/0073255	A1	3/2013	Yuen et al.
2013/0080113	A1	3/2013	Yuen et al.
2013/0096843	A1	4/2013	Yuen et al.
2013/0151196	A1	6/2013	Yuen et al.
2013/0158369	A1	6/2013	Yuen et al.
2013/0231574	A1	9/2013	Tran
2013/0267249	A1	10/2013	Rosenberg
2013/0268236	A1	10/2013	Yuen et al.
2013/0325396	A1	12/2013	Yuen et al.
2014/0039804	A1	2/2014	Park et al.
2014/0039840	A1	2/2014	Yuen et al.

OTHER PUBLICATIONS

"Classification of Human Moving Patterns Using Air Pressure and Acceleration", Sagawa, et al, Proceedings of the 24th Annual Conference of the IEEE Industrial Electronics Society, vol. 2, Aug.-Sep. 1998, pp. 1214-1219.

"Non-restricted measurement of walking distance", Sagawa, et al, IEEE Int'l Conf. on Systems, Man, and Cybernetics, vol. 3, Oct. 2000, pp. 1847-1852.

"Activity Classification Using Realistic Data From Wearable Sensors", Parkka, et al, IEEE Transactions on Information Technology in Biomedicine, vol. 10, No. 1, Jan. 2006, pp. 119-128.

"Indoor Navigation with MEMS Sensors", Lammel, et al., Proceedings of the Eurosensors XIII conference, vol. 1, No. 1, Sep. 2009, pp. 532-535.

"Design of a Wireless Assisted Pedestrian Dead Reckoning System—The NavMote Experience", Fang, et al, IEEE Transactions on Instrumentation and Measurement, vol. 54, No. 6, Dec. 2005, pp. 2342-2358.

"On Foot Navigation: When GPS alone is not Enough", Ladetto, et al, Journal of Navigation, vol. 53, No. 2, Sep. 2000, pp. 279-285.

"A Hybrid Discriminative/Generative Approach for Modeling Human Activities", Lester, et al., Proc. of the Int'l Joint Conf. Artificial Intelligence, 2005, pp. 766-772.

"Using MS5534 for altimeters and barometers", Intersema App., Note AN501, Jan. 2006.

"Validated caloric expenditure estimation using a single body-worn sensor", Lester, et al, Proc. of the Int'l Conf. on Ubiquitous Computing, 2009, pp. 225-234.

"Drift-free dynamic height sensor using MEMS IMU aided by MEMS pressure sensor", Tanigawa, et al, Workshop on Positioning, Navigation and Communication, Mar. 2008, pp. 191-196.

"Improvement of Walking Speed Prediction by Accelerometry and Altimetry, Validated by Satellite Positioning", Perrin, et al, Medical & Biological Engineering & Computing, vol. 38, 2000, pp. 164-168.

"An Intelligent Multi-Sensor system for Pedestrian Navigation", Retscher, Journal of Global Positioning Systems, vol. 5, No. 1, 2006, pp. 110-118.

"Evaluation of a New Method of Heading Estimation of Pedestrian Dead Reckoning Using Shoe Mounted Sensors", Stirling et al., Journal of Navigation, vol. 58, 2005, pp. 31-45.

"Direct Measurement of Human Movement by Accelerometry", Godfrey, et al., Medical Engineering & Physics, vol. 30, 2008, pp. 1364-1386.

"Foot Mounted Inertia System for Pedestrian Naviation", Godha et al., Measurement Science and Technology, vol. 19, No. 7, May 2008, pp. 1-9.

"Altimeter and Barometer System", Clifford, et al., Freescale Semiconductor Aplication Note AN1979, Rev. 3, Nov. 2006.

"SCP 1000-D01/D11 Pressure Sensor as Barometer and Altimeter", VTI Technologies Application, Jun. 2006, Note 33.

"Suunto LUMI User Guide", Jun. and Sep. 1997.

International Search Report issued on Aug. 15, 2008, in related application PCT/IB07/03617.

* cited by examiner

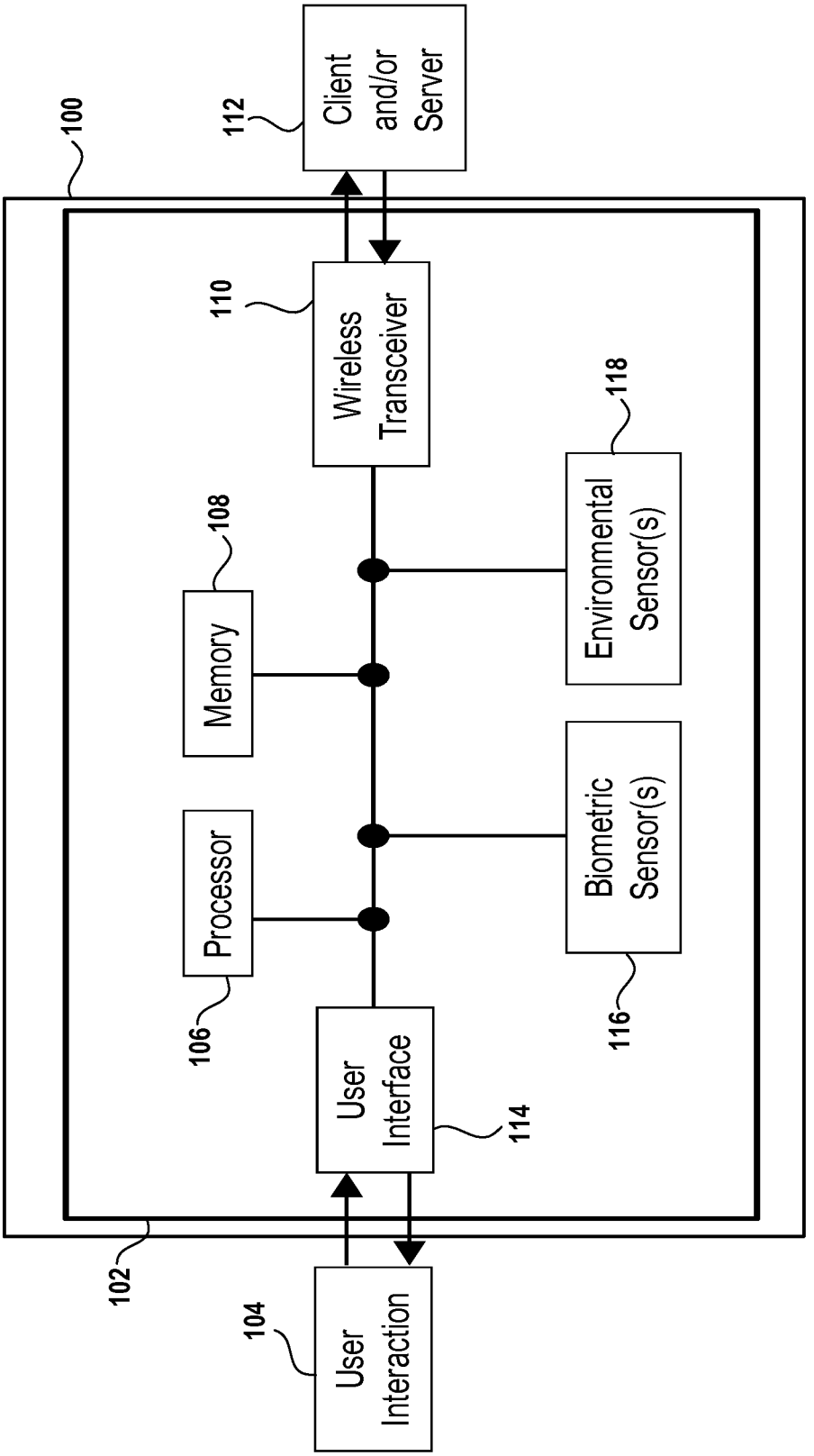

100
112
Client and/or Server
110
Wireless Transceiver
118
Environmental Sensor(s)
108
Memory
Processor
106
Biometric Sensor(s)
116
User Interface
114
102
104
User Interaction

FIG. 1A

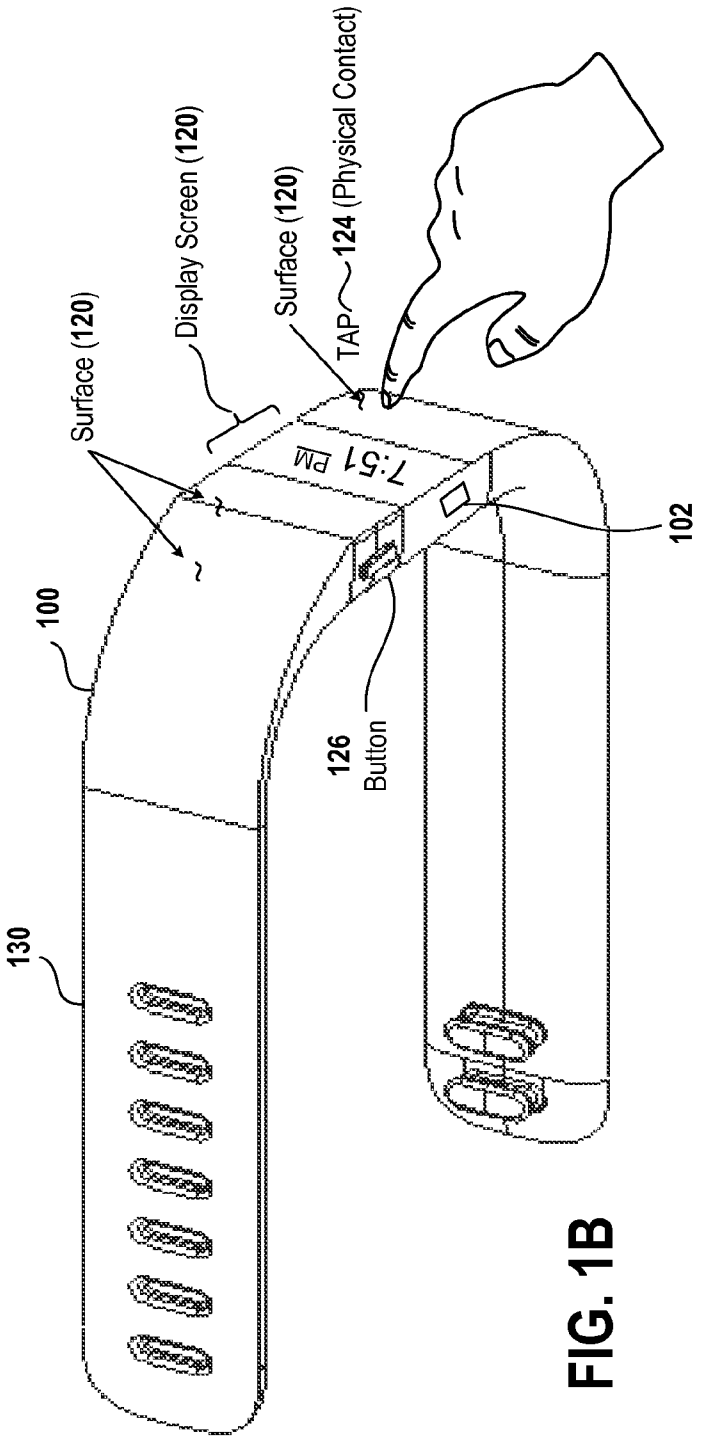

Surface (120)
Display Screen (120)
Surface (120)
124 (Physical Contact)
TAP
7:51 PM
102
100
126
Button
130

FIG. 1B

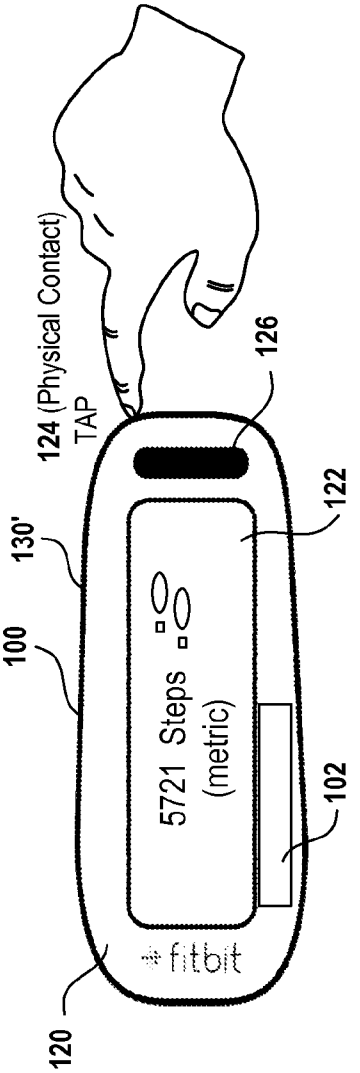

124 (Physical Contact)
TAP
126
122
130'
100
5721 Steps
(metric)
102
fitbit
120

FIG. 1C

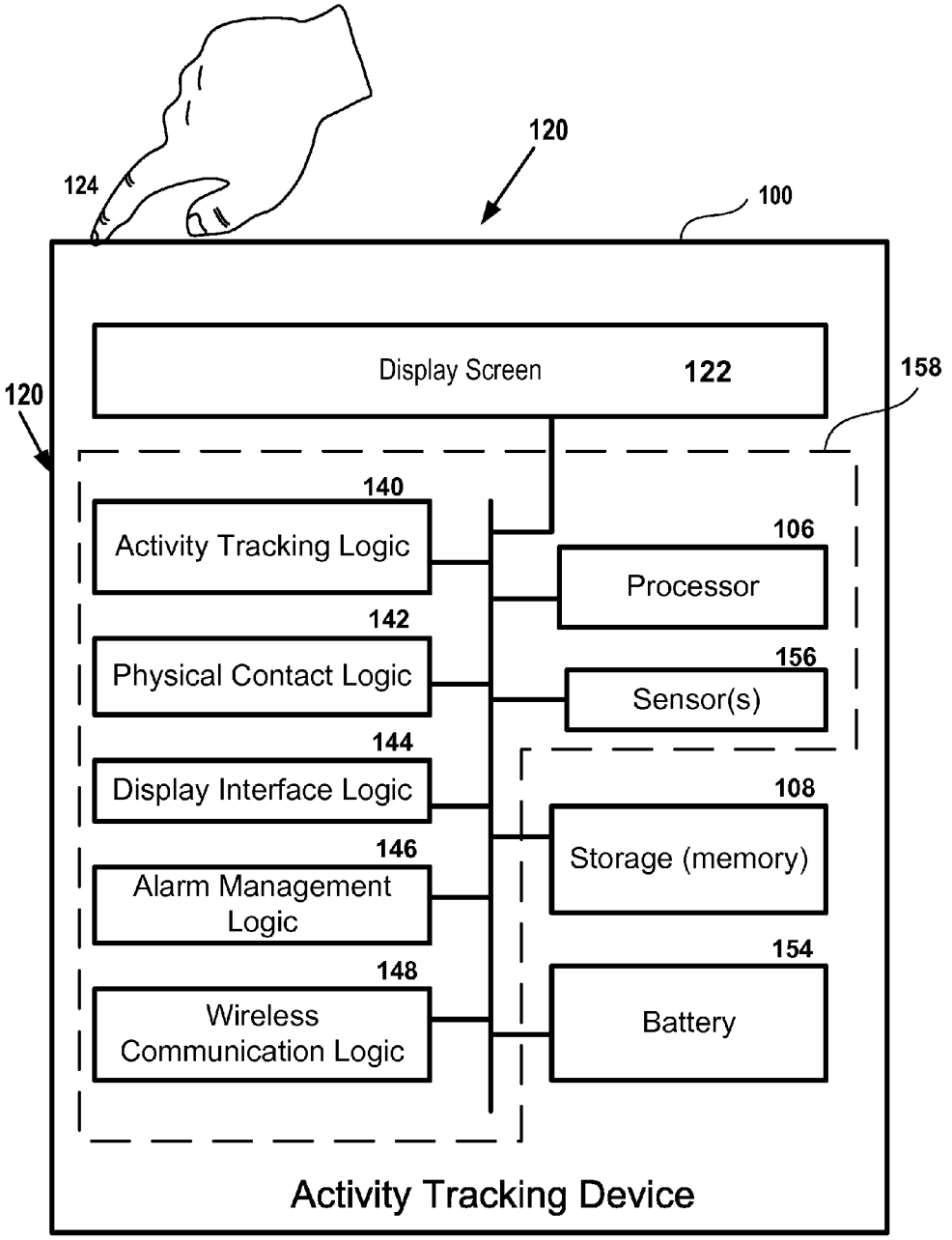

124
120
100
120
Display Screen 122
158
140
Activity Tracking Logic
106
Processor
142
Physical Contact Logic
156
Sensor(s)
144
Display Interface Logic
108
Storage (memory)
146
Alarm Management Logic
154
148
Wireless Communication Logic
Battery
Activity Tracking Device

FIG. 2A

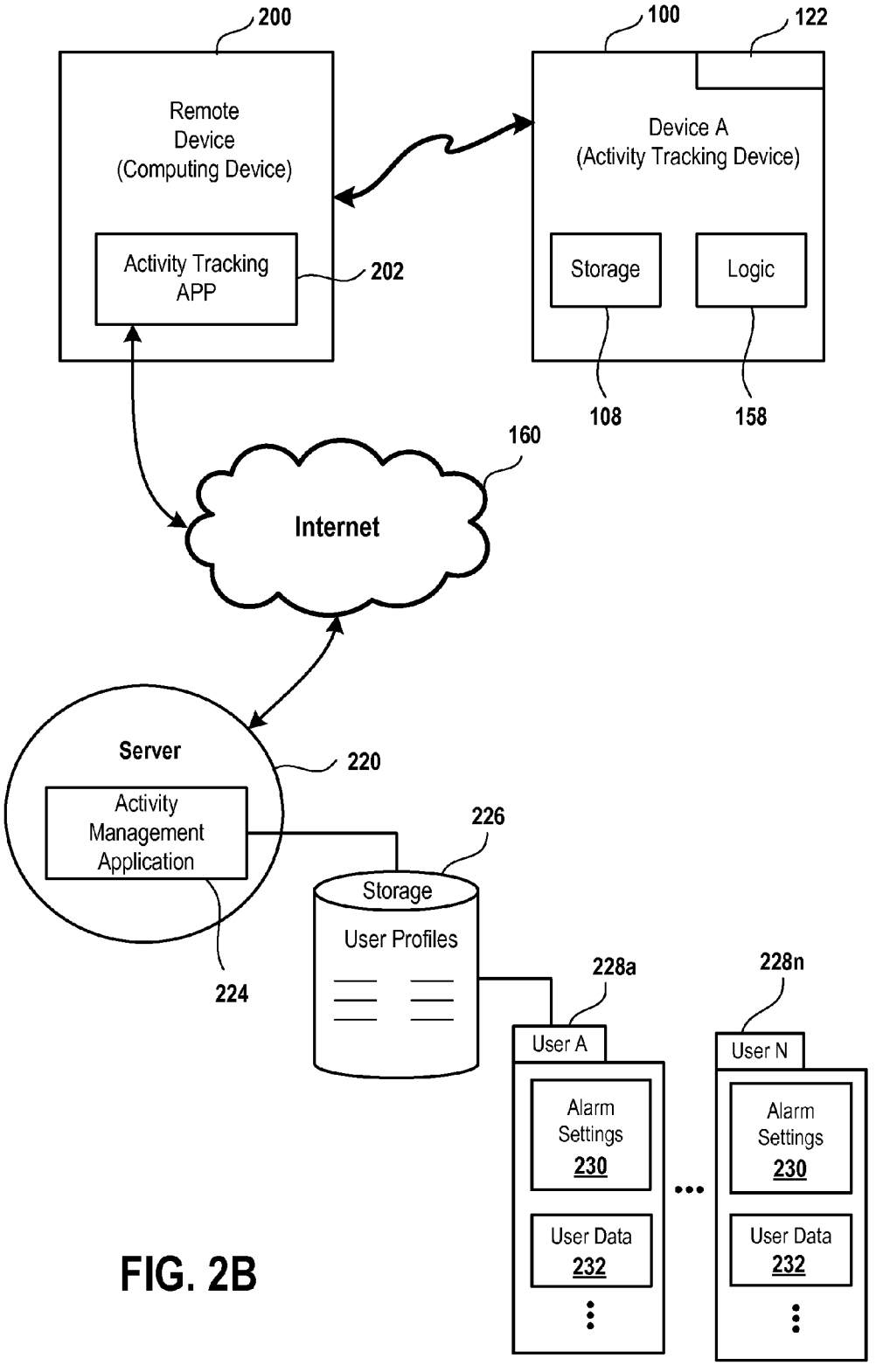

200
Remote
Device
(Computing Device)
Activity Tracking
APP
202
100
122
Device A
(Activity Tracking Device)
Storage
Logic
108
158
160
Internet
Server
220
Activity
Management
Application
224
226
Storage
User Profiles
228a
228n
User A
User N
Alarm
Settings
230
User Data
232
Alarm
Settings
230
User Data
232

FIG. 2B

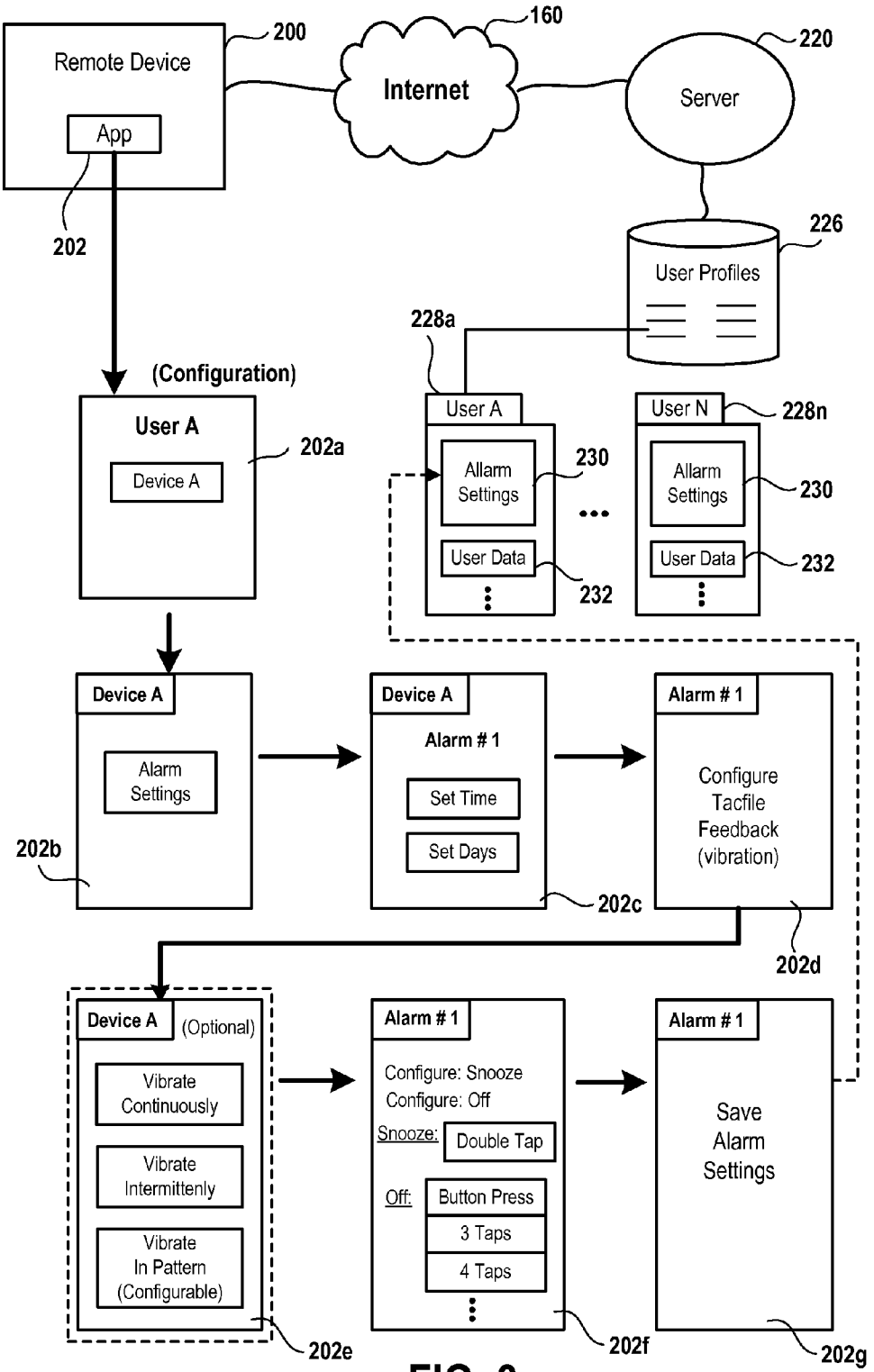

Remote Device
App
200
202
160
Internet
220
Server
226
User Profiles
228a
(Configuration)
User A
Device A
202a
User A
Allarm Settings
230
User Data
232
User N
228n
Allarm Settings
230
User Data
232
Device A
Alarm Settings
202b
Device A
Alarm # 1
Set Time
Set Days
202c
Alarm # 1
Configure Tacfile Feedback (vibration)
202d
Device A
(Optional)
Vibrate Continuously
Vibrate Intermittenly
Vibrate In Pattern (Configurable)
202e
Alarm # 1
Configure: Snooze
Configure: Off
Snooze:
Double Tap
Off:
Button Press
3 Taps
4 Taps
202f
Alarm # 1
Save Alarm Settings
202g

FIG. 3

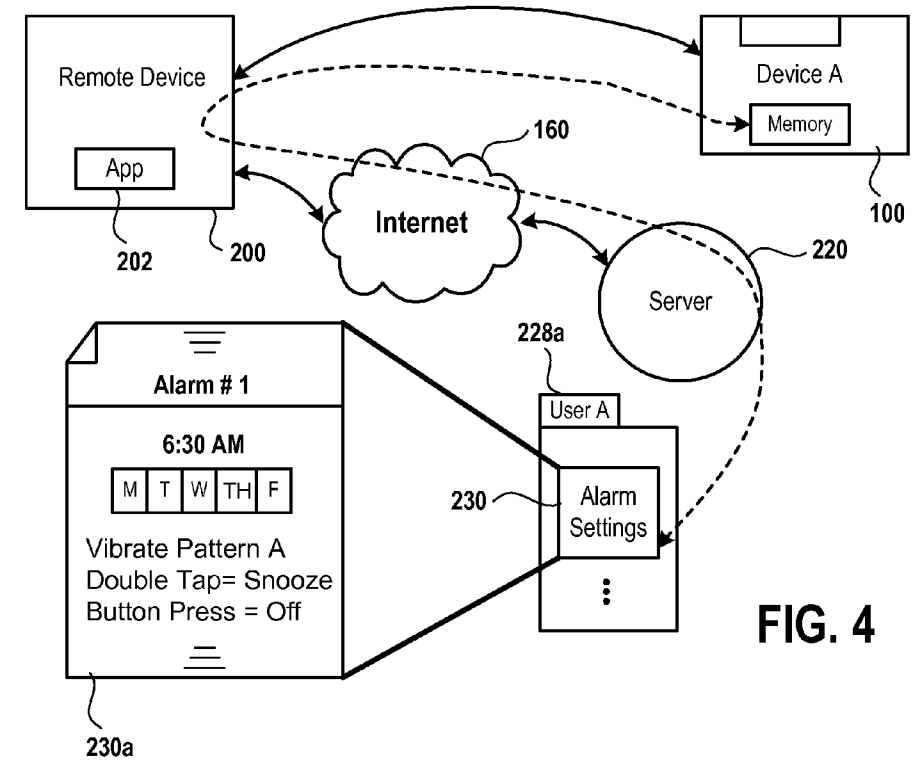

Remote Device
App
202
200
Internet
160
Device A
Memory
100
220
Server
228a
User A
Alarm Settings
230
Alarm # 1
6:30 AM
M T W TH F
Vibrate Pattern A
Double Tap= Snooze
Button Press = Off
230a

FIG. 4

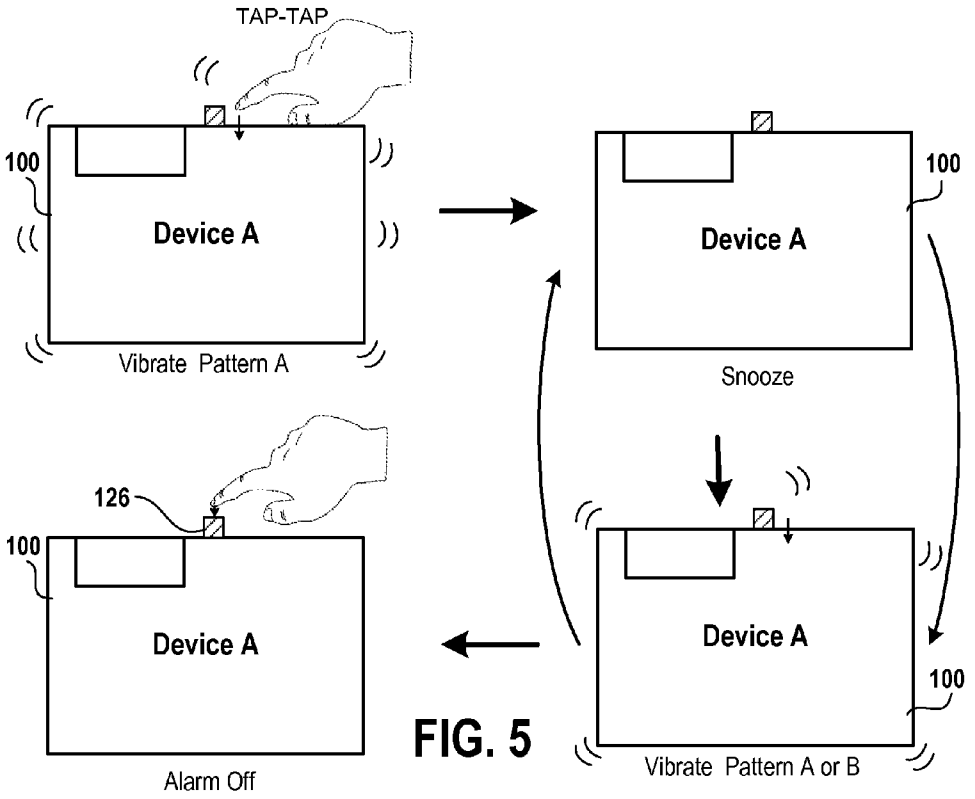

TAP-TAP
100
Device A
Vibrate Pattern A
Snooze
126
Alarm Off
Vibrate Pattern A or B

FIG. 5

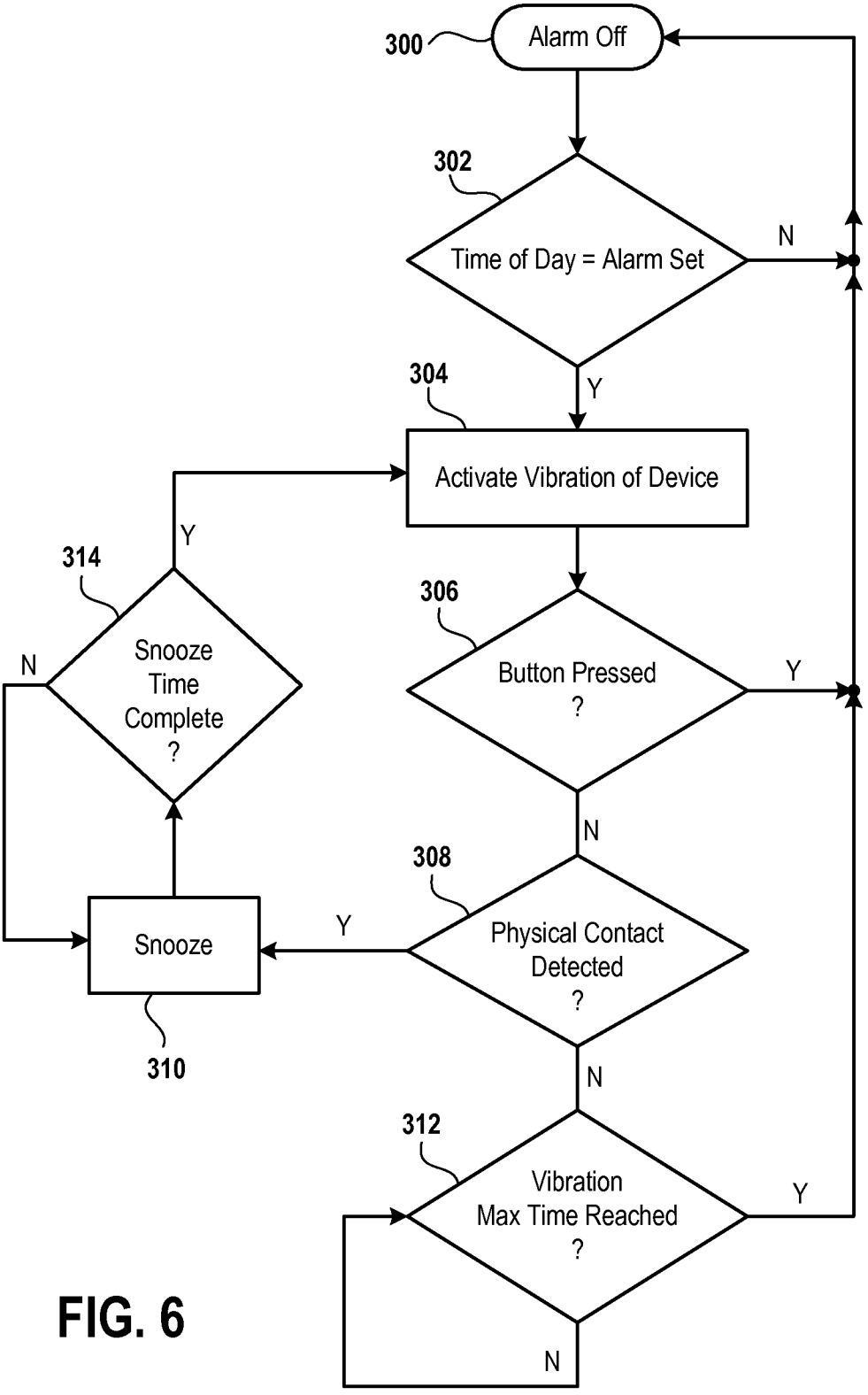

300
Alarm Off
302
Time of Day = Alarm Set
N
Y
304
Activate Vibration of Device
306
Button Pressed ?
Y
N
308
Physical Contact Detected ?
Y
Snooze
310
N
312
Vibration Max Time Reached ?
Y
N
314
Snooze Time Complete ?
N
Y

FIG. 6

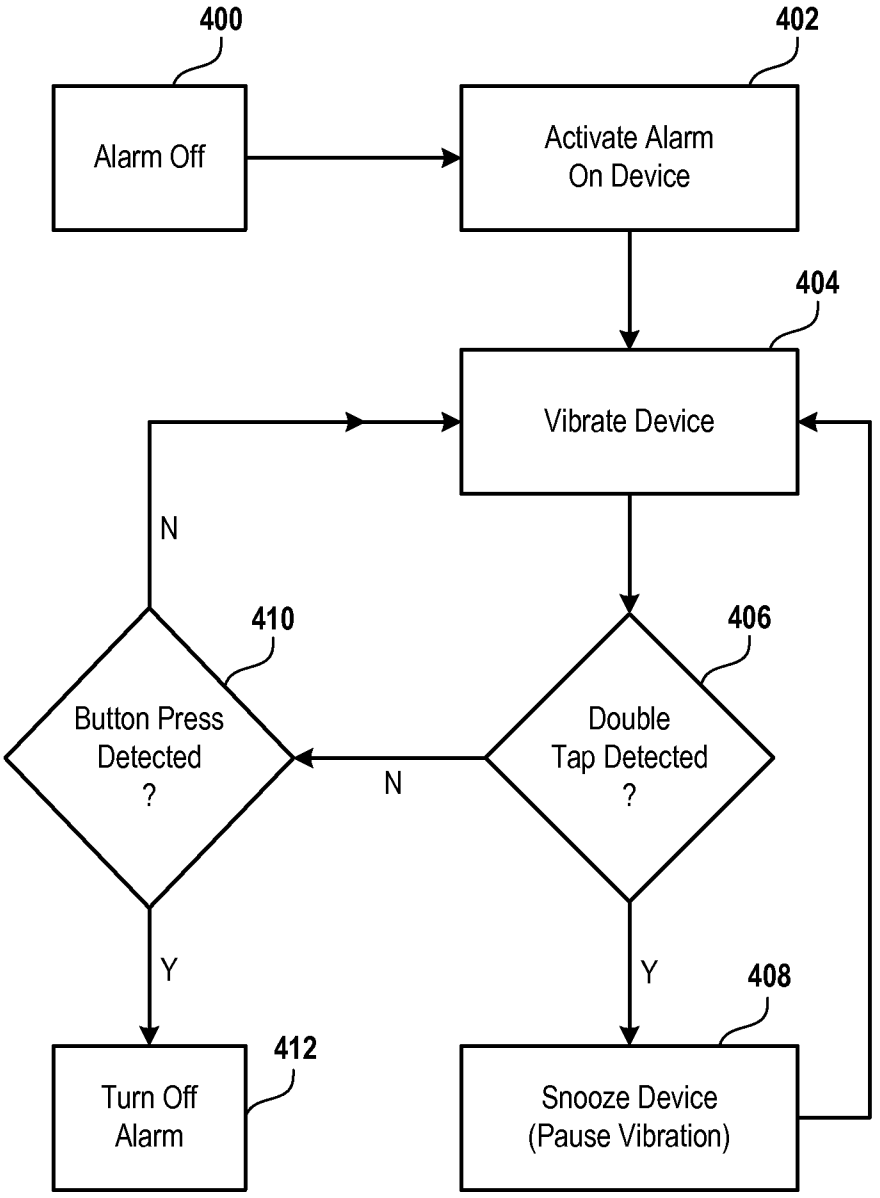

400
Alarm Off
402
Activate Alarm On Device
404
Vibrate Device
N
410
Button Press Detected ?
406
Double Tap Detected ?
N
Y
Y
408
412
Turn Off Alarm
Snooze Device (Pause Vibration)

FIG. 7

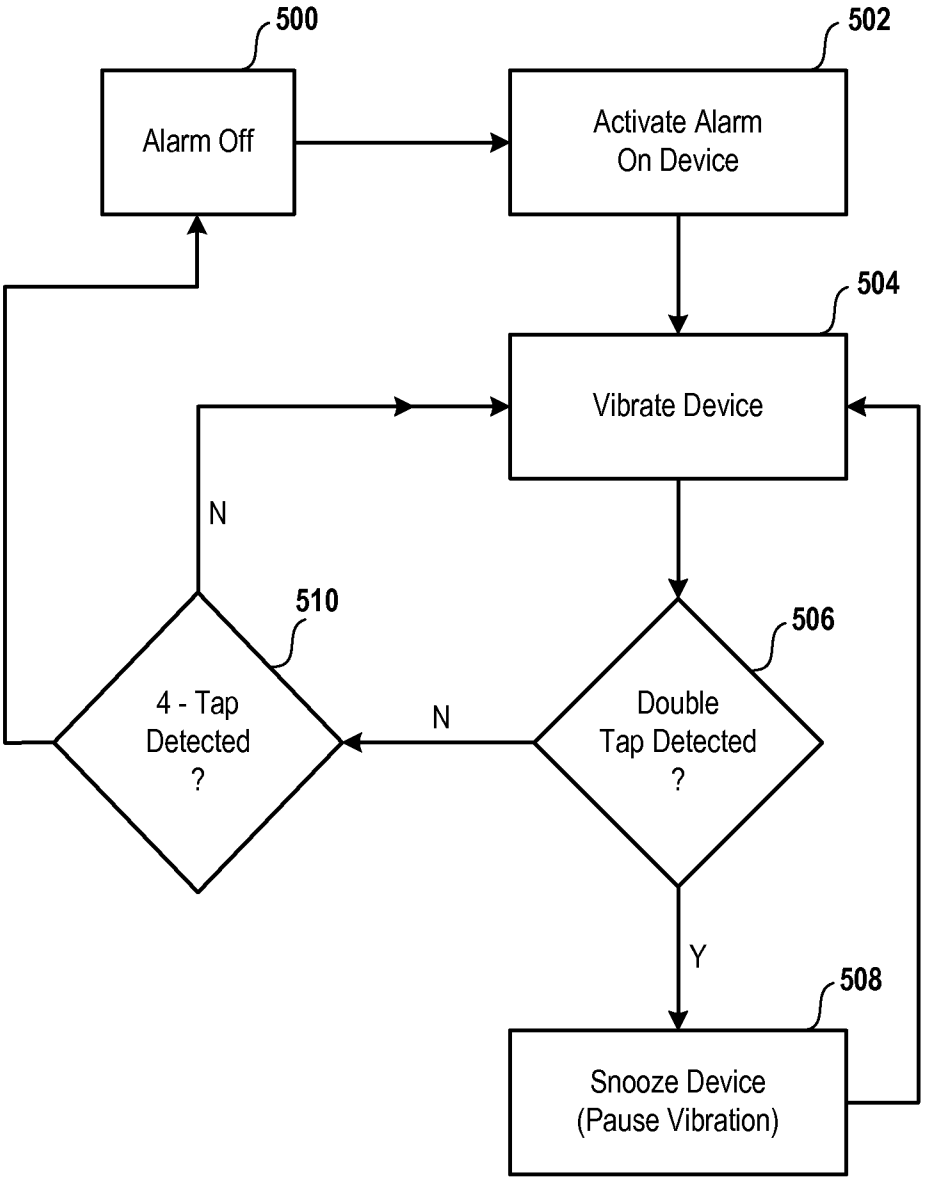

500
Alarm Off
502
Activate Alarm On Device
504
Vibrate Device
N
510
4 - Tap Detected ?
N
506
Double Tap Detected ?
Y
508
Snooze Device (Pause Vibration)

FIG. 8

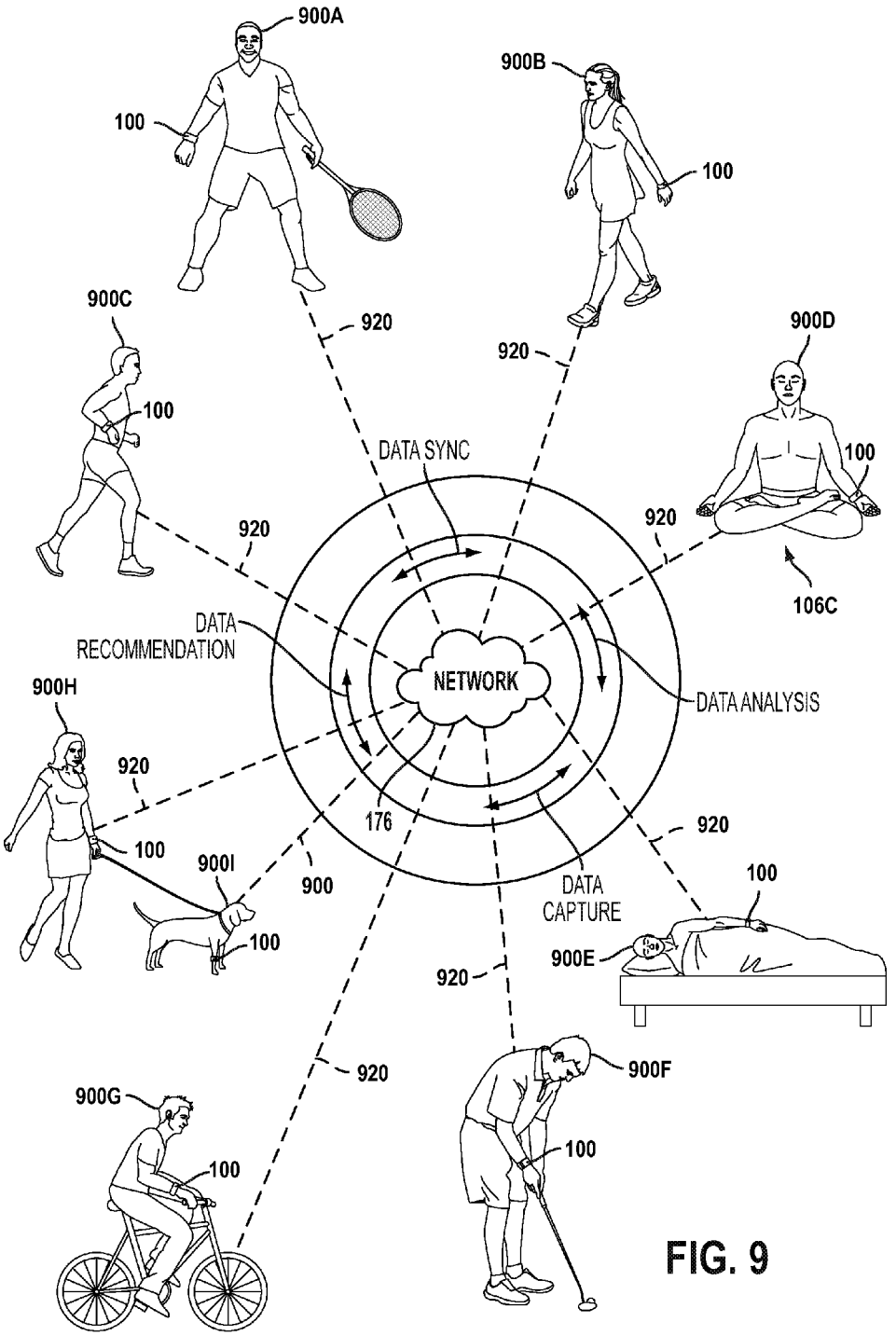

900A
100
900B
100
900C
100
900D
100
106C
920
DATA SYNC
DATA RECOMMENDATION
NETWORK
DATA ANALYSIS
900H
100
900I
100
900
176
DATA CAPTURE
900E
100
900F
100
900G
100

FIG. 9

ALARM SETTING AND INTERFACING WITH GESTURE CONTACT INTERFACING CONTROLS

CLAIMS OF PRIORITY

This application claims priority to U.S. Provisional Application No. 61/886,000, entitled "Alarm Setting and Interfacing with Gesture Contact Interfacing Controls," filed on Oct. 2, 2013, and which is incorporated herein by reference.

This application is a continuation-in-part of U.S. patent application Ser. No. 13/959,714, filed on Aug. 5, 2013, titled "Methods and Systems for Identification of Event Data Having Combined Activity and Location Information of Portable Monitoring Devices", which is a continuation-in-part of U.S. patent application Ser. No. 13/693,334 (now issued as U.S. Pat. No. 8,548,770, issued on Oct. 1, 2013), filed on Dec. 4, 2012, titled "Portable Monitoring Devices and Methods for Operating Same", which is a divisional of U.S. patent application Ser. No. 13/667,229 (now issued as U.S. Pat. No. 8,437,980, issued on May 7, 2013), filed on Nov. 2, 2012, titled "Portable Monitoring Devices and Methods for Operating Same", which is a divisional of U.S. patent application Ser. No. 13/469,027, now U.S. Pat. No. 8,311,769, filed on May 10, 2012, titled "Portable Monitoring Devices and Methods for Operating Same", which is a divisional of U.S. patent application Ser. No. 13/246,843, now U.S. Pat. No. 8,180,591, filed on Sep. 27, 2011, which is a divisional of U.S. patent application Ser. No. 13/156,304, filed on Jun. 8, 2011, titled "Portable Monitoring Devices and Methods for Operating Same", which claims the benefit of and priority to, under 35 U.S.C. **119**§(*e*), to U.S. Provisional Patent Application No. 61/388,595, filed on Sep. 30, 2010, and titled "Portable Monitoring Devices and Methods for Operating Same", and to U.S. Provisional Patent Application No. 61/390,811, filed on Oct. 7, 2010, and titled "Portable Monitoring Devices and Methods for Operating Same", all of which are hereby incorporated by reference in their entirety, except for U.S. patent application Ser. No. 13/959,714.

This application is a continuation-in-part of Ser. No. 13/959,714, filed Aug. 5, 2013, titled "Methods and Systems for Identification of Event Data Having Combined Activity and Location Information of Portable Monitoring Devices", which is a continuation-in-part of U.S. patent application Ser. No. 13/759,485, (now issued as U.S. Pat. No. 8,543,351, issued on Sep. 24, 2013), filed on Feb. 5, 2013, titled "Portable Monitoring Devices and Methods for Operating Same", which is a divisional of U.S. patent application Ser. No. 13/667,229, filed on Nov. 2, 2012, titled "Portable Monitoring Devices and Methods for Operating Same", which is a divisional of U.S. patent application Ser. No. 13/469,027, now U.S. Pat. No. 8,311,769, filed on May 10, 2012, titled "Portable Monitoring Devices and Methods for Operating Same", which is a divisional of U.S. patent application Ser. No. 13/246,843, now U.S. Pat. No. 8,180,591, filed on Sep. 27, 2011, which is a divisional of U.S. patent application Ser. No. 13/156,304, filed on Jun. 8, 2011, titled "Portable Monitoring Devices and Methods for Operating Same", which claims the benefit of and priority to, under 35 U.S.C. 119§(e), to U.S. Provisional Patent Application No. 61/388,595, filed on Sep. 30, 2010, and titled "Portable Monitoring Devices and Methods for Operating Same" and to U.S. Provisional Patent Application No. 61/390,811, filed on Oct. 7, 2010, and titled "Portable Monitoring Devices and Methods for Operating Same", all of which are hereby incorporated by reference in their entirety, except for U.S. patent application Ser. No. 13/959,714.

CROSS REFERENCE TO RELATED APPLICATION

This Application is related to U.S. application Ser. No. 14/050,292, filed on Oct. 9, 2013, entitled "Methods, Systems, and Devices for Activity Tracking Device Data Synchronization with Computing Devices," which claims priority to U.S. Provisional Application No. 61/885,962, filed on Oct. 2, 2013, both of which are incorporated herein by reference.

FIELD

The present disclosure relates to systems and methods for capturing activity data over a period of time and methods and systems for configuring alarm settings in activity tracking devices.

BACKGROUND

In recent years, the need for health and fitness has grown tremendously. The growth has occurred due to a better understanding of the benefits of good fitness to overall health and wellness. Unfortunately, although today's modern culture has brought about many new technologies, such as the Internet, connected devices and computers, people have become less active. Additionally, many office jobs require people to sit in front of computer screens for long periods of time, which further reduces a person's activity levels. Furthermore, much of today's entertainment options involve viewing multimedia content, computer social networking, and other types of computer involved interfacing. Although such computer activity can be very productive as well as entertaining, such activity tends to reduce a person's overall physical activity.

To provide users concerned with health and fitness a way of measuring or accounting for their activity or lack thereof, fitness trackers are often used. Fitness trackers are used to measure activity, such as walking, motion, running, sleeping, being inactive, bicycling, exercising on an elliptical trainer, and the like. Usually, the data collected by such fitness trackers can be transferred and viewed on a computing device. However, such data is often provided as a basic accumulation of activity data with complicated or confusing interfaces.

It is in this context that embodiments described herein arise.

SUMMARY

Embodiments described in the present disclosure provide systems, apparatus, computer readable media, and methods for configuring alarm setting for activity tracking devices using remote computing devices and transferring the configured alarm settings to the activity tracking devices. Some embodiments are directed toward the use of contact gestures either to transition an alarm of the activity tracking device into a snooze mode or to turn the alarm off.

In one embodiment, a method, which is executed by a processor, is provided. The method includes receiving an alarm setting that defines a time of day for triggering an alarm on a device for tracking activity data of a user, and activating the alarm upon reaching the time of day defined by the alarm setting. The alarm produces a vibration of the activity tracking device. The method further includes using a sensor to detect a physical contact upon the device, and deactivating the alarm if the physical contact qualifies as an input to deactivate the alarm. The deactivating of the alarm causes the vibration of the activity tracking device to be suspended.

In one embodiment, the suspension of the vibration of the activity tracking device transitions the alarm into either a snooze mode or an off mode. In one embodiment, the snooze mode continues for a predetermined period of time before reactivating the alarm. In one embodiment, the method further includes transitioning into the snooze mode one or more times until entering the off mode or processing the vibration for a threshold period of time.

In one embodiment, the physical contact is a result of one or more taps on a surface of the activity tracking device. In one embodiment, a snooze mode, which causes the vibration to be suspended, is entered when the physical contact is represented by a single tap onto a surface of the activity tracking device, or a double tap onto the surface of the device, or three taps onto the surface of the device, or four taps onto the surface of the device, or a predetermined set of repeated taps onto the surface of the device. In one embodiment, two or more of the taps are received within a predetermined period of time to qualify as an input.

In one embodiment, the method further includes transitioning from the snooze mode to an off mode when an additional physical contact is sensed by the sensor. The additional physical contact can be represented by a single tap onto a surface of the activity tracking device, or a double tap onto the surface of the device, or three taps onto the surface of the device, or four taps onto the surface of the device, or a predetermined set of repeated taps onto the surface of the device. In one embodiment, two or more of the taps are received within a predetermined period of time to qualify as an input.

In one embodiment, the method further includes transitioning from the snooze mode to an off mode when the processor of the activity tracking device determines that a button of the device is pressed.

In one embodiment, the alarm setting is received wirelessly from a computing device. In one embodiment, the computing device has access to the Internet. In one embodiment, the alarm setting is programmable at a website managed by a server, and the website is managed by the server to allow access to user accounts, with each user account having associated therewith one or more of the activity tracking devices, such that the alarm setting is custom set in a user account

In one embodiment, the alarm setting is transferred from the server to the computing device over the Internet and from the computing device to the device via a wireless Bluetooth connection. In one embodiment, the activity data of the user includes metrics associated with one or more of step count metrics, or stair count metrics, or distance traveled metrics, or active time metrics, or calories burned metrics, or sleep metrics.

In another embodiment, a device configured for capture of activity data for a user is provided. The device includes a housing, a sensor, a motor, a memory, and a processor. The sensor is disposed in the housing to capture physical contact upon the housing. The motor causes vibration of the housing of the device. The memory stores an alarm setting that defines a time of day for triggering an alarm on the device. The processor activates the alarm upon reaching the time of day defined by the alarm setting, with the alarm causing the motor to produce the vibration of the housing. The sensor, which is interfaced with the processor, is configured to detect a physical contact upon the housing of the device. The processor is configured to deactivate the alarm if the physical contact qualifies as an input to deactivate the alarm. The deactivating of the alarm causes the vibration of the device to be suspended.

In one embodiment, the housing is part of a wearable wrist attachable structure, or an attachable structure that can be carried or worn by the user. In one embodiment, the wearable wrist attachable structure is defined at least partially from a plastic material. In one embodiment, the physical contact captured by the sensor is from one or more taps upon the housing by a finger or hand. In one embodiment, the housing includes a button, and the physical contact upon the housing of the device is not from a button press.

In one embodiment, the housing further includes wireless communication logic. In one embodiment, the wireless communication logic includes one of WiFi processing logic, or Bluetooth (BT) processing logic, or radio processing logic. In one embodiment, the wireless communication logic is configured to pair with a portable computing device or a computer, and the portable computing device or the computer is configured for communication over the Internet with a server, the server having processing instructions for configuring the alarm settings.

In one embodiment, the processor examines predefined motion profiles captured by the sensor to qualify the physical contact as the input, such that motion profiles outside of the predetermined motion profiles do not qualify as the input. In one embodiment, suspending the vibration of the device transitions the alarm into one of a snooze mode or an off mode. In one embodiment, the processor configures the snooze mode to continue for a predetermined period of time before reactivating the alarm, and the processor transitions into the snooze mode one or more times until entering the off mode or processing the vibration for a threshold period of time.

In one embodiment, the physical contact is the result of one or more taps on a surface of the device. In one embodiment, two or more of the taps are received within a predetermined period of time to qualify as the input. In one embodiment, the processor causes a snooze mode, which causes the vibration to be suspended, to be entered when the physical contact is represented by a single tap onto a surface of the device, or a double tap onto the surface of the device, or three taps onto the surface of the device, or four taps onto the surface of the device, or a predetermined set of repeated taps onto the surface of the device.

In yet another embodiment, one or more non-transitory computer readable media are provided. The one or more computer readable media include instructions which, when executed by a processor, perform the following operations: receiving an alarm setting that defines a time of day for triggering an alarm on a device for tracking activity data of a user; activating the alarm upon reaching the time of day defined by the alarm setting, the alarm producing a vibration of the device; using a sensor to detect a physical contact upon the device; and deactivating the alarm if the physical contact qualifies as an input to deactivate the alarm, the deactivating causing the vibration of the device to be suspended.

Other aspects will become apparent from the following detailed description, taken in conjunction with the accompanying drawings, illustrating by way of example the principles of embodiments described in the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

Various embodiments described in the present disclosure may best be understood by reference to the following description taken in conjunction with the accompanying drawings in which:

FIG. **1**A shows a block diagram of an activity tracking device, in accordance with one embodiment of the present invention.

FIG. **1**B illustrates an example of an activity tracking device, in accordance with one embodiment of the present invention.

FIG. **1**C illustrates another example of an activity tracking device, in accordance with one embodiment of the present invention.

FIG. **2**A illustrates an example of activity tracking device including example components utilized for tracking activity and motion of the device, and associated interfaces to a display screen, in accordance with one embodiment of the present invention.

FIG. **2**B illustrates an example of activity tracking device in communication with a remote device, in accordance with one embodiment of the present invention.

FIG. **3** is a block diagram that illustrates the configuring of alarm settings for an activity tracking device, in accordance with one embodiment of the present invention.

FIG. **4** is a block diagram that illustrates how the alarm settings configured using a remote device, e.g., a smartphone or tablet computing device, are made available to one or more activity tracking devices, in accordance with one embodiment of the present invention.

FIG. **5** is a block diagram that illustrates how the alarm of an activity tracking device can be transitioned into a snooze mode or turned off, in accordance with one embodiment of the present invention.

FIG. **6** is a flowchart diagram that shows the method operations performed in implementing an alarm in an activity tracking device, in accordance with one embodiment of the present invention.

FIG. **7** is a flowchart diagram that shows the method operations performed in implementing an alarm in an activity tracking device, in accordance with another embodiment of the present invention.

FIG. **8** is a flowchart diagram that shows the method operations performed in implementing an alarm in an activity tracking device, in accordance with yet another embodiment of the present invention.

FIG. **9** illustrates an example where various types of activities of users can be captured by activity tracking devices, in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION

Embodiments described in the present disclosure provide systems, apparatus, computer readable media, and methods for configuring alarm setting for activity tracking devices using remote computing devices and transferring the configured alarm settings to the activity tracking devices. Some embodiments are directed toward the use of contact gestures either to transition an alarm of the activity tracking device into a snooze mode or to turn the alarm off.

It should be noted that there are many inventions described and illustrated herein. The present inventions are neither limited to any single aspect nor embodiment thereof, nor to any combinations and/or permutations of such aspects and/or embodiments. Moreover, each of the aspects of the present inventions, and/or embodiments thereof, may be employed alone or in combination with one or more of the other aspects of the present inventions and/or embodiments thereof. For the sake of brevity, many of those permutations and combinations will not be discussed separately herein.

Further, in the course of describing and illustrating the present inventions, various circuitry, architectures, structures, components, functions and/or elements, as well as combinations and/or permutations thereof, are set forth. It should be understood that circuitry, architectures, structures, components, functions and/or elements other than those specifically described and illustrated, are contemplated and are within the scope of the present inventions, as well as combinations and/or permutations thereof.

FIG. **1**A shows a block diagram of an activity tracking device **100**, in accordance with one embodiment of the present invention. The activity tracking device **100** is contained in a housing, which may be worn or held by a user. The housing may be in the form of a wristband, a clip on device, a wearable device, or may be held by the user either in the user's hand or in a pocket or attached to the user's body. The activity tracking device **100** includes device components **102**, which may be in the form of logic, storage, and glue logic, one or more processors, microelectronics, and interfacing circuitry. In one example, the components **102** will include a processor **106**, memory **108**, a wireless transceiver **110**, a user interface **114**, biometric sensors **116**, and environmental sensors **118**.

The environmental sensors **118** may be in the form of motion detecting sensors. In some embodiments, a motion sensor can be one or more of an accelerometer, or a gyroscope, or a rotary encoder, or a calorie measurement sensor, or a heat measurement sensor, or a moisture measurement sensor, or a displacement sensor, or an ultrasonic sensor, or a pedometer, or an altimeter, or a linear motion sensor, or an angular motion sensor, or a multi-axis motion sensor, or a combination thereof. The biometric sensors **116** can be defined to measure physiological characteristics of the user that is using the activity tracking device **100**. The user interface **114** provides a way for communicating with the activity tracking device **100**, in response to user interaction **104**. The user interaction **104** can be in the form of physical contact (e.g., without limitation, tapping, sliding, rubbing, multiple taps, gestures, etc.).

In some embodiments, the user interface **114** is configured to receive user interaction **104** that is in the form of noncontact input. The noncontact input can be by way of proximity sensors, button presses, touch sensitive screen inputs, graphical user interface inputs, voice inputs, sound inputs, etc. The activity tracking device **100** can communicate with a client and/or server **112** using the wireless transceiver **110**. The wireless transceiver **110** will allow the activity tracking device **100** to communicate using a wireless connection, which is enabled by wireless communication logic. The wireless communication logic can be in the form of a circuit having radio communication capabilities. The radio communication capabilities can be in the form of a Wi-Fi connection, a Bluetooth connection, a low-energy Bluetooth connection, or any other form of wireless tethering or near field communication. In still other embodiments, the activity tracking device **100** can communicate with other computing devices using a wired connection (not shown). As mentioned, the environmental sensors **118** can detect motion of the activity tracking device **100**.

The motion can be activity of the user, such as walking, running, stair climbing, etc. The motion can also be in the form of physical contact received on any surface of the activity tracking device **110**, so long as the environmental sensors **118** can detect such motion from the physical contact. As will be explained in more detail below, the physical contact may be in the form of a tap or multiple taps by a finger upon the housing of the activity tracking device **100**.

FIG. **1**B illustrates an example of an activity tracking device **100** having a housing **130** in the form of a wearable wrist attachable device. The sensors of the activity tracking device **100** can, as mentioned above, detect motion such as physical contact that is applied and received on a surface **120**

of the housing **130**. In the example shown, the physical contact **124** is in the form of a tap or multiple taps on the surface **120**. Device components **102** are, in one embodiment, contained within the housing **130**. The location at which the device components **102** are integrated into the housing **130** can vary. For example, the device components **102** can be integrated throughout various locations around the housing **130**, and not limited to the central portion of the wrist attachable device. In some embodiments, the device components **102** can be integrated into or with a smart watch device.

In other embodiments, the device components **102** are positioned substantially in a central position of the wrist attachable device, such as under or proximate to a location where a display screen **122** is located. In the illustrated example, the housing **130** also includes a button **126**. The button **126** can be pressed to activate the display screen **122**, navigate to various metrics displayed on the screen **122**, or turn off the screen **122**.

FIG. **1**C illustrates another example of an activity tracking device **100**, in accordance with one embodiment of the present invention. The form factor of the activity tracking device **100** is shown as a clickable device that includes a screen **122**, a button **126**, and device components **102** integrated within the housing **130'**. The housing **130'** can include a clip that allows for attachment to clothing or articles of the user, or to simply place the device within a pocket or holder of the user. Accordingly, the physical contact **124** shown with respect to FIG. **1**B can also be implemented upon the surface **120** of activity tracking device **100** of FIG. **1**C. It should be understood, therefore, that the form factor of the activity tracking device **100** can take on various configurations and should not be limited to the example configurations provided herein.

FIG. **2**A illustrates an example of activity tracking device **100** of FIG. **1**A, showing some additional example components utilized for tracking activity and motion of the device, and associated interfaces to display screen **122**. In this example, the finger of a user can be used to tap and provide physical contact **124** onto any surface **120** of activity tracking device **100**. The physical contact, when sensed by sensors **156** of the activity tracking device **100**, will cause a response by the activity tracking device **100**, and therefore provide some metric on the display screen **122**. In one embodiment, examples of a display screen **122** can include, but are not limited to, liquid crystal display (LCD) screens, light emitting diode (LED) screens, organic light emitting diode (OLED) screens, plasma display screens, etc.

As shown in FIG. **2**A, the activity tracking device **100** includes logic **158**. Logic **158** may include activity tracking logic **140**, physical contact logic **142**, display interface logic **144**, alarm management logic **146**, wireless communication logic **148**, processor **106**, and sensors **156**. Additionally, storage (e.g. memory) **108**, and a battery **154** can be integrated within the activity tracking device **100**. The activity tracking logic **140** can include logic that is configured to process motion data produced by sensors **156**, so as to quantify the motion and produce identifiable metrics associated with the motion.

Some motions will produce and quantify various types of metrics, such as step count, stairs climbed, distance traveled, very active minutes, calories burned, etc. The physical contact logic **142** can include logic that calculates or determines when particular physical contact can qualify as an input. To qualify as an input, the physical contact detected by sensors **156** should have a particular pattern that is identifiable as input. For example, the input may be predefined to be a double tap input, and the physical contact logic **142** can analyze the motion to determine if a double tap indeed occurred in response to analyzing the sensor data produced by sensors **156**.

In other embodiments, the physical contact logic can be programmed to determine when particular physical contacts occurred, the time in between the physical contacts, and whether the one or more physical contacts will qualify within predefined motion profiles that would indicate that an input is desired. If physical contact occurs that is not within some predefined profile or pattern, the physical contact logic will not indicate or qualify that physical contact as an input.

The display interface logic **144** is configured to interface with the processor and the physical contact logic to determine when specific metric data will be displayed on the display screen **122** of the activity tracking device **100**. The display interface logic **144** can act to turn on the screen, display metric information, display characters or alphanumeric information, display graphical user interface graphics, or combinations thereof. Alarm management logic **146** can function to provide a user interface and settings for managing and receiving input from a user to set an alarm. The alarm management logic can interface with a timekeeping module (e.g., clock, calendar, time zone, etc.), and can trigger the activation of an alarm. The alarm can be in the form of an audible alarm or a non-audible alarm.

A non-audible alarm can provide such alarm by way of a vibration. The vibration can be produced by a motor integrated in the activity tracking device **100**. The vibration can be defined to include various vibration patterns, intensities, and custom set patterns. The vibration produced by the motor or motors of the activity tracking device **100** can be managed by the alarm management logic **146** in conjunction with processing by the processor **106**. The wireless communication logic **148** is configured for communication of the activity tracking device with another computing device by way of a wireless signal. The wireless signal can be in the form of a radio signal. As noted above, the radio signal can be in the form of a Wi-Fi signal, a Bluetooth signal, a low energy Bluetooth signal, or combinations thereof. The wireless communication logic can interface with the processor **106**, storage **108** and battery **154** of device **100**, for transferring activity data, which may be in the form of motion data or processed motion data, stored in the storage **108** to the computing device.

In one embodiment, processor **106** functions in conjunction with the various logic components **140**, **142**, **144**, **146**, and **148**. The processor **106** can, in one embodiment, provide the functionality of any one or all of the logic components. In other embodiments, multiple chips can be used to separate the processing performed by any one of the logic components and the processor **106**. Sensors **156** can communicate via a bus with the processor **106** and/or the logic components. The storage **108** is also in communication with the bus for providing storage of the motion data processed or tracked by the activity tracking device **100**. Battery **154** is provided for providing power to the activity tracking device **100**.

FIG. **2**B illustrates an example of activity tracking device **100** in communication with a remote device **200**. Remote device **200** is a computing device that is capable of communicating wirelessly with activity tracking device **100** and with the Internet **160**. Remote device **200** can support installation and execution of applications. Such applications can include an activity tracking application **202**. Activity tracking application **202** can be downloaded from a server. The server can be a specialized server or a server that provides applications to devices, such as an application store. Once the activity tracking application **202** is installed in the remote device **200**, the

remote device **200** can communicate or be set to communicate with activity tracking device **100** (Device A). The remote device **200** can be a smartphone, a handheld computer, a tablet computer, a laptop computer, a desktop computer, or any other computing device capable of wirelessly interfacing with Device A and the Internet.

In one embodiment, remote device **200** communicates with activity tracking device **100** over a Bluetooth connection. In one embodiment, the Bluetooth connection is a low energy Bluetooth connection (e.g., Bluetooth LE, BLE, or Bluetooth Smart). Low energy Bluetooth is configured for providing low power consumption relative to standard Bluetooth circuitry. Low energy Bluetooth uses, in one embodiment, a 2.4 GHz radio frequency, which allows for dual mode devices to share a single radio antenna. In one embodiment, low energy Bluetooth connections can function at distances up to 50 meters, with over the air data rates ranging between 1-3 megabits (Mb) per second. In one embodiment, a proximity distance for communication can be defined by the particular wireless link, and is not tied to any specific standard. It should be understood that the proximity distance limitation will change in accordance with changes to existing standards and in view of future standards and/or circuitry and capabilities.

Remote device **200** can also communicate with the Internet **160** using an Internet connection. The Internet connection of the remote device **200** can include cellular connections, wireless connections such as Wi-Fi, and combinations thereof (such as connections to switches between different types of connection links). The remote device, as mentioned above, can be a smartphone or tablet computer, or any other type of computing device having access to the Internet and with capabilities for communicating with the activity tracking device **100**.

A server **220** is also provided, which is interfaced with the Internet **160**. The server **220** can include a number of applications that service the activity tracking device **100**, and the associated users of the activity tracking device **100** by way of user accounts. For example, the server **220** can include an activity management application **224**. The activity management application **224** can include logic for providing access to various devices **100**, which are associated with user accounts managed by server **220**. Server **220** can include storage **226** that includes various user profiles associated with the various user accounts. The user account **228***a* for user A and the user account **228***n* for user N are shown to include various information.

The information in a user account can include, without limitation, data associated with alarm settings **230**, user data, etc. As will be described in more detail below, the alarm settings **230** include information regarding a user's preferences, settings, and configurations which are settable by the user or set by default at the server **220** when accessing a respective user account. The storage **226** will include any number of user profiles, depending on the number of registered users having user accounts for their respective activity tracking devices. It should also be noted that a single user account can have various or multiple devices associated therewith, and the multiple devices can be individually customized, managed, and accessed by a user. In one embodiment, the server **220** provides access to a user to view the user data **232** associated with an activity tracking device.

FIG. **3** is a block diagram that illustrates the configuring of alarm settings for an activity tracking device **100**, in accordance with one embodiment of the present invention. As described above, remote device **200**, e.g., a smartphone or a tablet computing device, is provided with activity tracking application **202**. Both remote device **200** and also server **220** can communicate with Internet **160**. Server **220** can include storage **226** that includes various user profiles associated with various user accounts. The information in the user accounts can include, among other data, data associated with alarm settings **230**.

To enable a user to configure the alarm settings for an activity tracking device **100** using remote device **200**, activity tracking application **202** provides a number of interfaces that allow the user to configure the alarm settings. In one embodiment, the activity tracking application **202** displays a view **202***a* that shows the activity tracking devices associated with the user's account. As shown in view **202***a*, only "Device A" is associated with User A's account. It should be appreciated, however, that additional activity tracking devices, e.g., Device B, Device C, etc., also could be associated with a user's account. A suitable GUI control, e.g., a graphic icon that can be activated by a finger touch or other user input, is used to identify each device associated with the user's account, e.g., Device A, Device B, etc., so that the user can select the device for which the alarm settings are to be configured. In the example shown in view **202***a*, the user would touch the "Device A" GUI control to select that device for configuration.

Once the particular device to be configured has been selected, the activity tracking application **202** displays a view **202***b* that shows the settings available to be selected for configuration. As shown in view **202***b*, only "Alarm Settings" are available to be selected for configuration. It should be appreciated, however, that other settings also could be displayed. In the example shown in view **202***b*, the user would touch the "Alarm Settings" GUI control to select those settings for configuration. As shown in view **202***c*, the activity tracking application **202** then provides GUI controls that allow the user to proceed to set an alarm time ("Set Time") and to select the days on which the alarm is to be active ("Set Days"). In the event the user touches the "Set Time" GUI control, the activity tracking application **202** displays a further view (not shown) that allows the user to set an alarm time, e.g., 6:30 am, 7:30 am, etc. In the event the user touches the "Set Days" GUI control, the activity tracking application **202** displays a further view (not shown) that allows the user to set the days on which the alarm is to be active, e.g., Monday, Tuesday, Monday thru Friday (weekdays), etc. It should be appreciated that more than one alarm, e.g., Alarm #1, Alarm #2, Alarm #3, etc., can be configured in this manner.

Once the time and days for an alarm have been set, the activity tracking application **202** provides GUI controls that allow a user to select either an audible alarm or a non-audible alarm. The non-audible alarm can be produced by tactile feedback, e.g., vibration, generated by a motor for causing vibration of the housing of the activity tracking device. The vibration can be a default vibration set by the system or, optionally, a vibration that is configured by the user. In the example shown in view **202***d*, the activity tracking application **202** displays a GUI control that allows the user to configure the tactile feedback (e.g., vibration) used to produce a non-audible alarm. The activity tracking application **202** then displays GUI controls that allow the user to select the nature of the vibration. In the example shown in view **202***e*, the GUI controls include "Vibrate Continuously," "Vibrate Intermittently," and "Vibrate in Pattern." In one embodiment, the vibration pattern is configurable, as will be described in more detail below.

As shown in view **202***f*, the activity tracking application **202** also displays GUI controls that allow a user to configure the contact gestures that can be applied to the activity tracking device to either turn the alarm off or transition the alarm into

a snooze mode. In the example shown in view **202***f*, the alarm will be placed into a snooze mode when the activity tracking device detects that a surface of the activity tracking device has received a double tap (two (2) taps). Further, the alarm will be turned off when the activity tracking device detects one of the following: a button press; three (3) taps to a surface of the activity tracking device; or four (4) taps to a surface of the activity tracking device. It will be appreciated that the configuration shown in view **202***f* is an example and that this configuration can be varied to suit the needs of the user. Once the alarm settings have been configured, as shown in view **202***g*, the alarm settings are saved and the saved alarm settings **230** can be accessed by the server **220**, as described above.

FIG. **4** is a block diagram that illustrates how the alarm settings configured using a remote device, e.g., a smartphone or tablet computing device, are made available to one or more activity tracking devices, in accordance with one embodiment of the present invention. As shown in FIG. **4**, the configured alarm settings **230** for user account **228***a* for a User A are stored on the server **220**. In the example alarm settings **230***a* shown in the figure, the alarm settings for "Alarm #1" have been set to trigger an alarm at 6:30 am on weekdays (Monday thru Friday). Further, the alarm settings have been configured to 1) trigger a non-audible alarm that uses "Vibrate Pattern A," 2) place the alarm in a snooze mode when a surface of the activity tracking device is detected to receive a "Double Tap," and 3) turn the alarm off when a button of the activity tracking device is pressed. These alarm settings can be configured using activity tracking application **202** of remote device **200**, as described above with reference to FIG. **3**.

The alarm settings configured using activity tracking application **202** of remote device **200** are saved to a memory of the remote device. When an Internet connection is available to remote device **200**, the alarm settings are uploaded to server **220** via the Internet **160**. As described above, the server **220** stores user profiles in storage **226**. The alarm settings for a particular user are stored in that user's account (see, e.g., alarm settings **230** in user account **228***a* for User A). These alarm settings can be transferred to an activity tracking device **100** in several ways, as described below.

Each time the alarm settings are configured using the activity tracking application **202** of a remote device **200**, the alarm settings are stored to the server **220**. It is possible for a user to configure the alarm settings using multiple remote devices **200**. As such, it is also possible that the alarm settings stored on a given remote device **200** might not have the most recent configuration because, e.g., the user changed the configuration of the alarm settings using a different remote device. To make sure that each remote device **200** of a user has the current alarm settings, the activity tracking application **202** on each remote device periodically synchronizes the configuration of alarm settings stored in the memory of the remote device with the configuration of the alarm settings stored on the server **220**.

The alarm settings stored in the memory of a remote device **200** can be transferred to an activity tracking device **100** over a Bluetooth connection, as described above. In one embodiment, the Bluetooth connection is a low energy Bluetooth connection (e.g., Bluetooth LE, BLE, or Bluetooth Smart). Whenever an activity tracking device **100**, e.g., Device A shown in FIG. **4**, comes within a predefined proximity distance of a remote device **200** having an activity tracking application **202**, the current alarm settings stored in the memory of the remote device are communicated to the memory of the activity tracking device over the Bluetooth connection. As a result of the synchronization process described above, the current alarm settings stored in the memory of a remote device are typically the same as the alarm settings stored on the server **220**. It is possible, however, that a user could change the configuration of the alarm settings on a remote device **200** without uploading the new alarm settings to the server **220**. For example, the remote device **200** might not have access to a functioning Internet connection. In this scenario, it is still possible to transfer the newly configured alarm settings from the remote device **200** to an activity tracking device **100** over the Bluetooth connection because the activity tracking application **202** stores the newly configured alarm settings to a memory of the remote device.

FIG. **5** is a block diagram that illustrates how the alarm of an activity tracking device can be transitioned into a snooze mode or turned off, in accordance with one embodiment of the present invention. In the example shown in FIG. **5**, the alarm of activity tracking device **100** produces a vibration in the form of a vibration pattern referred to as "Vibrate Pattern A." When activity tracking device **100** detects that a surface of the device has received a double tap, the alarm is transitioned into a snooze mode and vibration is suspended. After a predefined snooze period, e.g., 2 minutes, 5 minutes, etc., elapses, the alarm is triggered again. In one embodiment, the alarm again produces a vibration in the form of "Vibrate Pattern A." In another embodiment, the alarm produces a vibration in the form of a different vibration pattern referred to as "Vibrate Pattern B." In the event the activity tracking device **100** detects that a surface of the device has received a double tap, the alarm will again be placed in a snooze mode. Once again, the alarm will be triggered after the predefined snooze period elapses, and the process of transitioning the alarm into a snooze mode can be repeated until the alarm is turned off. As shown in FIG. **5**, the alarm can be turned off by pressing button **126** of activity tracking device **100**.

FIG. **6** is a flowchart diagram that shows the method operations performed in implementing an alarm in an activity tracking device, in accordance with one embodiment of the present invention. The method begins in operation **300** in which the alarm is maintained in the "off" state. In operation **302**, a determination is made as to whether the current time of day is the same as the time at which an alarm is set. If it is determined that an alarm is not set for the current time of day, then the method returns to operation **300** and the alarm continues to be maintained in the "off" mode. If it is determined that an alarm is set for the current time of day, then the method proceeds to operation **304** in which the alarm is triggered. In one embodiment, the alarm is triggered by activating vibration of the activity tracking device. As described above, the vibration may be implemented by a motor that causes vibration of the housing of the activity tracking device.

Once the alarm has been triggered, a determination is made in operation **306** as to whether a button of the activity tracking device has been pressed. If it is determined that a button of the activity tracking device has been pressed, then the alarm is turned off and the method returns to operation **300** in which the alarm is maintained in the "off" state. If it is determined that a button of the activity tracking device has not been pressed, then the method proceeds to operation **308**. In operation **308**, a determination is made as to whether the activity tracking device has detected physical contact with a surface thereof. In one embodiment, it is determined whether the activity tracking device has detected that a surface thereof has received a contact gesture in the form of a double tap (two (2) taps). It should be appreciated, however, that other predefined numbers of contact gestures can be detected, e.g., three (3) taps or four (4) taps. If it is determined that the activity

tracking device has detected a double tap on a surface thereof, then the method proceeds to operation **310**. On the other hand, if it is determined that the activity device has not detected any physical contact with a surface thereof, then the method proceeds to operation **312**.

In operation **310**, in response to the detected double tap on a surface of the activity tracking device, the alarm is transitioned into a snooze mode and vibration is suspended. The method then proceeds to operation **314** in which a determination is made as to whether the snooze period has elapsed. In one embodiment, the snooze period is preset by the system and lasts for a predefined period of time, e.g., 2 minutes, 3 minutes, 5 minutes, etc. In another embodiment, the snooze period is set by a user and lasts for the period of time selected by the user, e.g., 5 minutes, 10 minutes, 15 minutes, etc. If it is determined in operation **314** that the snooze period has not yet elapsed, then the method returns to operation **310** and the alarm remains in snooze mode. On the other hand, if it is determined that the snooze period has elapsed, then the method returns to operation **304** and the alarm is triggered again.

As noted above, when it is determined in operation **308** that the activity device has not detected any physical contact with a surface thereof, the method proceeds to operation **312**. In operation **312**, a determination is made as to whether the threshold vibration time, which is the maximum allowable vibration time, has been reached. In one embodiment, the maximum allowable vibration time is set by the system and lasts for a predefined period of time, e.g., 5 minutes, 10 minutes, 15 minutes, etc. The alarm will continue to vibrate until it is determined that the maximum allowable vibration time has been reached. Once it is determined that the maximum allowable vibration time has been reached, the alarm is turned off and the method returns to operation **300** in which the alarm is maintained in the "off" mode.

FIG. **7** is a flowchart diagram that shows the method operations performed in implementing an alarm in an activity tracking device, in accordance with another embodiment of the present invention. The method begins in operation **400** in which the alarm is maintained in the "off" state. In operation **402**, an alarm is activated on an activity tracking device. In response to the alarm being activated, in operation **404**, the activity tracking device is vibrated. In one embodiment, the activity tracking device is continuously vibrated. In another embodiment, the activity tracking device is intermittently vibrated. In still another embodiment, the activity tracking device is vibrated in accordance with one or more vibration patterns. Once the alarm is activated, the method proceeds to operation **406** in which a determination is made as to whether the activity tracking device has detected a double tap on a surface thereof. If it is determined that a double tap has been detected, then the method proceeds to operation **408**. On the other hand, if it is determined that a double tap has not been detected, then the operation proceeds to operation **410**.

In operation **408**, in response to the detected double tap, the alarm of the activity tracking device is transitioned into a snooze mode. In this snooze mode, the vibration of the activity tracking device is paused or suspended. When a predefined snooze period elapses, the method returns to operation **404** in which the activity tracking device is vibrated.

As noted above, when no double tap is detected in operation **406**, the method proceeds to operation **410**. In operation **410**, a determination is made as to whether the activity tracking device has detected that a button of the device has been pressed. If it is determined that a button press has been detected, then the method proceeds to operation **412** in which the alarm is turned off. On the other hand, if no button press is detected, then the activity tracking device continues to vibrate and the method returns to operation **404** for further processing.

In the method illustrated in FIG. **7**, the alarm is transitioned into a snooze mode when a double tap is detected, and the alarm is turned off when a button press is detected. It should be appreciated that the functionality of the double tap and the button press can be varied from that shown in FIG. **7**. For example, the alarm could be placed in a snooze mode when a button press is detected, and the alarm could be turned off when a double tap is detected.

It should be further appreciated that, in some instances, it might not be convenient to press a button of the activity tracking device to turn an alarm off (or to place the alarm in a snooze mode). For example, a user could be engaged in an activity, e.g., running, climbing stairs, etc., and might not want to stop the activity to turn off the alarm. To address such instances, the alarm can be configured to turn off automatically based on activity detected by the activity tracking device. In one embodiment, when the alarm goes off, the activity tracking device monitors the user's current activity level. When the activity tracking device detects that the user has taken a predefined number of steps, e.g., 40 steps, 50 steps, 60 steps, etc., since the alarm went off, the alarm is turned off automatically without requiring any physical contact with the device on the part of the user. In another embodiment, when the alarm goes off, the activity tracking device not only monitor's the user's current activity level but also takes into account the user's activity level during a predefined period of time before the alarm went off, e.g., 1 minute, 2 minutes, etc. For example, if a runner had taken 90 steps in the minute before the alarm went off and the alarm was configured to turn after the user had taken 100 steps, then the alarm would be automatically turned off after the activity tracking device detected that the user had taken an additional 10 steps (for a total of 100 steps) since the alarm went off.

FIG. **8** is a flowchart diagram that shows the method operations performed in implementing an alarm in an activity tracking device, in accordance with yet another embodiment of the present invention. The method shown in FIG. **8** does not require the use of a button press to turn the alarm off. Consequently, this method can be implemented in activity tracking devices that do not include a button. The method begins in operation **500** in which the alarm is maintained in the "off" state or the "off" mode. In operation **502**, an alarm is activated on an activity tracking device. In response to the alarm being activated, in operation **504**, the activity tracking device is vibrated. Once the alarm is activated, the method proceeds to operation **506** in which a determination is made as to whether the activity tracking device has detected a double tap on a surface thereof. If it is determined that a double tap has been detected, then the method proceeds to operation **508**. On the other hand, if it is determined that a double tap has not been detected, then the operation proceeds to operation **510**.

In operation **508**, in response to the detected double tap, the alarm of the activity tracking device is transitioned into a snooze mode. In this snooze mode, the vibration of the activity tracking device is paused or suspended. When a predefined snooze period elapses, the method returns to operation **504** in which the activity tracking device is vibrated.

As noted above, when no double tap is detected in operation **506**, the method proceeds to operation **510**. In operation **510**, a determination is made as to whether the activity tracking device has detected four (4) taps ("a four tap") on a surface of the activity tracking device. If it is determined that a four tap has been detected, then the alarm is turned off and the method returns to operation **500** in which the alarm is main-

tained in the "off" state. On the other hand, if no four tap is detected, then the activity tracking device continues to vibrate and the method returns to operation **504** for further processing.

FIG. **9** illustrates an example where various types of activities of users **900**A-**900**I can be captured by activity tracking devices **100**, in accordance with one embodiment of the present invention. As shown, the various types of activities can generate different types of data that can be captured by the activity tracking device **100**. The data, which can be represented as motion data (or processed motion data) can be transferred **920** to a network **176** for processing and saving by a server, as described above. In one embodiment, the activity tracking device **100** can communicate to a device using a wireless connection, and the device is capable of communicating and synchronizing the captured data with an application running on the server. In one embodiment, an application running on a local device, such as a smartphone or tablet or smartwatch can capture or receive data from the activity tracking device **100** and represent the tract motion data in a number of metrics.

In one embodiment, the device collects one or more types of physiological and/or environmental data from embedded sensors and/or external devices and communicates or relays such metric information to other devices, including devices capable of serving as Internet-accessible data sources, thus permitting the collected data to be viewed, for example, using a web browser or network-based application. For example, while the user is wearing an activity tracking device, the device may calculate and store the user's step count using one or more sensors. The device then transmits data representative of the user's step count to an account on a web service, computer, mobile phone, or health station where the data may be stored, processed, and visualized by the user. Indeed, the device may measure or calculate a plurality of other physiological metrics in addition to, or in place of, the user's step count.

Some physiological metrics include, but are not limited to, energy expenditure (for example, calorie burn), floors climbed and/or descended, heart rate, heart rate variability, heart rate recovery, location and/or heading (for example, through GPS), elevation, ambulatory speed and/or distance traveled, swimming lap count, bicycle distance and/or speed, blood pressure, blood glucose, skin conduction, skin and/or body temperature, electromyography, electroencephalography, weight, body fat, caloric intake, nutritional intake from food, medication intake, sleep periods (i.e., clock time), sleep phases, sleep quality and/or duration, pH levels, hydration levels, and respiration rate. The device may also measure or calculate metrics related to the environment around the user such as barometric pressure, weather conditions (for example, temperature, humidity, pollen count, air quality, rain/snow conditions, wind speed), light exposure (for example, ambient light, UV light exposure, time and/or duration spent in darkness), noise exposure, radiation exposure, and magnetic field.

Still further, other metrics can include, without limitation, calories burned by a user, weight gained by a user, weight lost by a user, stairs ascended, e.g., climbed, etc., by a user, stairs descended by a user, steps taken by a user during walking or running, a number of rotations of a bicycle pedal rotated by a user, sedentary activity data, driving a vehicle, a number of golf swings taken by a user, a number of forehands of a sport played by a user, a number of backhands of a sport played by a user, or a combination thereof. In some embodiments, sedentary activity data is referred to herein as inactive activity data or as passive activity data. In some embodiments, when a user is not sedentary and is not sleeping, the user is active. In some embodiments, a user may stand on a monitoring device that determines a physiological parameter of the user. For example, a user stands on a scale that measures a weight, a body fat percentage, a biomass index, or a combination thereof, of the user.

Furthermore, the device or the system collating the data streams may calculate metrics derived from this data. For example, the device or system may calculate the user's stress and/or relaxation levels through a combination of heart rate variability, skin conduction, noise pollution, and sleep quality. In another example, the device or system may determine the efficacy of a medical intervention (for example, medication) through the combination of medication intake, sleep and/or activity data. In yet another example, the device or system may determine the efficacy of an allergy medication through the combination of pollen data, medication intake, sleep and/or activity data. These examples are provided for illustration only and are not intended to be limiting or exhaustive.

This information can be associated with the user's account, which can be managed by an activity management application on the server. The activity management application can provide access to the users account and data saved thereon. The activity manager application running on the server can be in the form of a web application. The web application can provide access to a number of websites screens and pages that illustrate information regarding the metrics in various formats. This information can be viewed by the user, and synchronized with a computing device of the user, such as a smartphone.

In one embodiment, the data captured by the activity tracking device **100** is received by the computing device, and the data is synchronized with the activity measured application on the server. In this example, data viewable on the computing device (e.g. smartphone) using an activity tracking application (app) can be synchronized with the data present on the server, and associated with the user's account. In this way, information entered into the activity tracking application on the computing device can be synchronized with application illustrated in the various screens of the activity management application provided by the server on the website.

The user can therefore access the data associated with the user account using any device having access to the Internet. Data received by the network **176** can then be synchronized with the user's various devices, and analytics on the server can provide data analysis to provide recommendations for additional activity, and or improvements in physical health. The process therefore continues where data is captured, analyzed, synchronized, and recommendations are produced. In some embodiments, the captured data can be itemized and partitioned based on the type of activity being performed, and such information can be provided to the user on the website via graphical user interfaces, or by way of the application executed on the users smart phone (by way of graphical user interfaces).

In an embodiment, the sensor or sensors of a device **100** can determine or capture data to determine an amount of movement of the monitoring device over a period of time. The sensors can include, for example, an accelerometer, a magnetometer, a gyroscope, or combinations thereof. Broadly speaking, these sensors are inertial sensors, which capture some movement data, in response to the device **100** being moved. The amount of movement (e.g., motion sensed) may occur when the user is performing an activity of climbing stairs over the time period, walking, running, etc. The monitoring device may be worn on a wrist, carried by a user, worn

on clothing (using a clip, or placed in a pocket), attached to a leg or foot, attached to the user's chest, waist, or integrated in an article of clothing such as a shirt, hat, pants, blouse, glasses, and the like. These examples are not limiting to all the possible ways the sensors of the device can be associated with a user or thing being monitored.

In other embodiments, a biological sensor can determine any number of physiological characteristics of a user. As another example, the biological sensor may determine heart rate, a hydration level, body fat, bone density, fingerprint data, sweat rate, and/or a bioimpedance of the user. Examples of the biological sensors include, without limitation, a biometric sensor, a physiological parameter sensor, a pedometer, or a combination thereof.

In some embodiments, data associated with the user's activity can be monitored by the applications on the server and the user's device, and activity associated with the user's friends, acquaintances, or social network peers can also be shared, based on the user's authorization. This provides for the ability for friends to compete regarding their fitness, achieve goals, receive badges for achieving goals, get reminders for achieving such goals, rewards or discounts for achieving certain goals, etc.

As noted, an activity tracking device **100** can communicate with a computing device (e.g., a smartphone, a tablet computer, a desktop computer, or computer device having wireless communication access and/or access to the Internet). The computing device, in turn, can communicate over a network, such as the Internet or an Intranet to provide data synchronization. The network may be a wide area network, a local area network, or a combination thereof. The network may be coupled to one or more servers, one or more virtual machines, or a combination thereof. A server, a virtual machine, a controller of a monitoring device, or a controller of a computing device is sometimes referred to herein as a computing resource. Examples of a controller include a processor and a memory device.

In one embodiment, the processor may be a general purpose processor. In another embodiment, the processor can be a customized processor configured to run specific algorithms or operations. Such processors can include digital signal processors (DSPs), which are designed to execute or interact with specific chips, signals, wires, and perform certain algorithms, processes, state diagrams, feedback, detection, execution, or the like. In some embodiments, a processor can include or be interfaced with an application specific integrated circuit (ASIC), a programmable logic device (PLD), a central processing unit (CPU), or a combination thereof, etc.

In some embodiments, one or more chips, modules, devices, or logic can be defined to execute instructions or logic, which collectively can be viewed or characterized to be a processor. Therefore, it should be understood that a processor does not necessarily have to be one single chip or module, but can be defined from a collection of electronic or connecting components, logic, firmware, code, and combinations thereof.

Examples of a memory device include a random access memory (RAM) and a read-only memory (ROM). A memory device may be a Flash memory, a redundant array of disks (RAID), a hard disk, or a combination thereof.

Embodiments described in the present disclosure may be practiced with various computer system configurations including hand-held devices, microprocessor systems, microprocessor-based or programmable consumer electronics, minicomputers, mainframe computers and the like. Several embodiments described in the present disclosure can also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a wire-based or wireless network.

With the above embodiments in mind, it should be understood that a number of embodiments described in the present disclosure can employ various computer-implemented operations involving data stored in computer systems. These operations are those requiring physical manipulation of physical quantities. Any of the operations described herein that form part of various embodiments described in the present disclosure are useful machine operations. Several embodiments described in the present disclosure also relate to a device or an apparatus for performing these operations. The apparatus can be specially constructed for a purpose, or the apparatus can be a computer selectively activated or configured by a computer program stored in the computer. In particular, various machines can be used with computer programs written in accordance with the teachings herein, or it may be more convenient to construct a more specialized apparatus to perform the required operations.

Various embodiments described in the present disclosure can also be embodied as computer-readable code on a non-transitory computer-readable medium. The computer-readable medium is any data storage device that can store data, which can thereafter be read by a computer system. Examples of the computer-readable medium include hard drives, network attached storage (NAS), ROM, RAM, compact disc-ROMs (CD-ROMs), CD-recordables (CD-Rs), CD-rewritables (RWs), magnetic tapes and other optical and non-optical data storage devices. The computer-readable medium can include computer-readable tangible medium distributed over a network-coupled computer system so that the computer-readable code is stored and executed in a distributed fashion.

Although the method operations were described in a specific order, it should be understood that other housekeeping operations may be performed in between operations, or operations may be performed in an order other than that shown, or operations may be adjusted so that they occur at slightly different times, or may be distributed in a system which allows the occurrence of the processing operations at various intervals associated with the processing.

Although the foregoing embodiments have been described in some detail for purposes of clarity of understanding, it will be apparent that certain changes and modifications can be practiced within the scope of the appended claims. Accordingly, the present embodiments are to be considered as illustrative and not restrictive, and the various embodiments described in the present disclosure are not to be limited to the details given herein, but may be modified within the scope and equivalents of the appended claims.

What is claimed is:

1. A method, comprising:

receiving an alarm setting that defines a time of day for triggering an alarm on a device for tracking activity data of a user;

activating the alarm upon reaching the time of day defined by the alarm setting, the alarm producing a vibration of the device;

using a sensor to detect a physical contact upon the device, wherein the physical contact is a result of one or more taps on a surface of the device; and

deactivating the alarm if the physical contact qualifies as an input to deactivate the alarm, the deactivating causing the vibration of the device to be suspended, wherein the method is executed by a processor.

2. The method of claim 1, wherein the vibration being suspended transitions the alarm into one of a snooze mode or an off mode.

3. The method of claim 2, wherein the snooze mode continues for a predetermined period of time before reactivating the alarm; and the method further includes:

transitioning into the snooze mode one or more times until entering the off mode or processing the vibration for a threshold period of time.

4. The method of claim 1, wherein a snooze mode is entered which causes the vibration to be suspended when the physical contact is represented by one of,

a single tap onto a surface of the device; or

a double tap onto the surface of the device; or

three taps onto the surface of the device; or

four taps onto the surface of the device; or

a predetermined set of repeated taps onto the surface of the device.

5. The method of claim 4, wherein two or more of the taps are received within a predetermined period of time to qualify as the input.

6. The method of claim 4, further comprising:

transitioning from the snooze mode to an off mode when an additional physical contact is sensed by the sensor, wherein the physical contact is represented by one of,

a single tap onto a surface of the device; or

a double tap onto the surface of the device; or

three taps onto the surface of the device; or

four taps onto the surface of the device; or

a predetermined set of repeated taps onto the surface of the device.

7. The method of claim 6, wherein two or more of the taps are received within a predetermined period of time to qualify as the input.

8. The method of claim 4, further comprising:

transitioning from the snooze mode to an off mode when the processor of the device determines that a button of the device is pressed.

9. A method, comprising:

receiving an alarm setting that defines a time of day for triggering an alarm on a device for tracking activity data of a user, the alarm setting being received wirelessly from a computing device;

activating the alarm upon reaching the time of day defined by the alarm setting, the alarm producing a vibration of the device;

using a sensor to detect a physical contact upon the device; and

deactivating the alarm if the physical contact qualifies as an input to deactivate the alarm, the deactivating causing the vibration of the device to be suspended, wherein the method is executed by a processor, wherein the computing device has access to the Internet, wherein the alarm setting is programmable at a website managed by a server, and wherein the website is managed by the server to allow access to user accounts, each user account having associated therewith one or more of the devices, such that the alarm setting is custom set in a user account.

10. The method of claim 9, wherein the alarm setting is transferred from the server to the computing device over the Internet and from the computing device to the device via a wireless Bluetooth connection.

11. A method, comprising:

receiving an alarm setting that defines a time of day for triggering an alarm on a device for tracking activity data of a user, wherein activity data of the user includes metrics associated with one or more of step count metrics, or stair count metrics, or distance traveled metrics, or active time metrics, or calories burned metrics, or sleep metrics;

activating the alarm upon reaching the time of day defined by the alarm setting, the alarm producing a vibration of the device;

using a sensor to detect a physical contact upon the device; and

deactivating the alarm if the physical contact qualifies as an input to deactivate the alarm, the deactivating causing the vibration of the device to be suspended, wherein the method is executed by a processor.

12. A device configured for capture of activity data for a user, comprising:

a housing;

a sensor disposed in the housing to capture physical contact upon the housing;

a motor for causing vibration of the housing of the device;

a memory for storing an alarm setting that defines a time of day for triggering an alarm on the device; and

a processor for activating the alarm upon reaching the time of day defined by the alarm setting, the alarm causing the motor to produce the vibration of the housing, the sensor being interfaced with the processor and configured to detect a physical contact upon the housing of the device, the processor configured to deactivate the alarm if the physical contact qualifies as an input to deactivate the alarm, the deactivating causing the vibration of the device to be suspended, wherein the processor examines predefined motion profiles captured by the sensor to qualify the physical contact as the input, such that motion profiles outside of the predetermined motion profiles do not qualify as the input.

13. The device of claim 12, wherein the housing is part of a wearable wrist attachable structure, or an attachable structure that can be carried or worn by the user.

14. The device of claim 12, wherein the physical contact captured by the sensor is from one or more taps upon the housing by a finger or hand.

15. The device of claim 12, wherein the housing includes a button, the physical contact upon the housing not being from a button press.

16. The device of claim 12, wherein the wearable wrist attachable structure is defined at least partially from a plastic material.

17. The device of claim 12, wherein the housing further includes wireless communication logic.

18. The device of claim 17, wherein the wireless communication logic includes one of WiFi processing logic, or Bluetooth (BT) processing logic, or radio processing logic.

19. The device of claim 17, wherein the wireless communication logic is configured to pair with a portable computing device or a computer, and the portable computing device or the computer is configured for communication over the Internet with a server, the server having processing instructions for configuring the alarm settings.

20. The device of claim 12, wherein the vibration being suspended transitions the alarm into one of a snooze mode or an off mode.

21. The device of claim 20, wherein the processor configures the snooze mode to continue for a predetermined period of time before reactivating the alarm, and the processor transitions into the snooze mode one or more times until entering the off mode or processing the vibration for a threshold period of time.

22. A device configured for capture of activity data for a user, comprising:

a housing;

a sensor disposed in the housing to capture physical contact upon the housing, wherein the physical contact is a result of one or more taps on a surface of the device;

a motor for causing vibration of the housing of the device;

a memory for storing an alarm setting that defines a time of day for triggering an alarm on the device; and

a processor for activating the alarm upon reaching the time of day defined by the alarm setting, the alarm causing the motor to produce the vibration of the housing, the sensor being interfaced with the processor and configured to detect a physical contact upon the housing of the device, the processor configured to deactivate the alarm if the physical contact qualifies as an input to deactivate the alarm, the deactivating causing the vibration of the device to be suspended.

23. The device of claim **22**, wherein two or more of the taps are received within a predetermined period of time to qualify as the input.

24. A device configured for capture of activity data for a user, comprising:

a housing;

a sensor disposed in the housing to capture physical contact upon the housing;

a motor for causing vibration of the housing of the device;

a memory for storing an alarm setting that defines a time of day for triggering an alarm on the device; and

a processor for activating the alarm upon reaching the time of day defined by the alarm setting, the alarm causing the motor to produce the vibration of the housing, the sensor being interfaced with the processor and configured to detect a physical contact upon the housing of the device, the processor configured to deactivate the alarm if the physical contact qualifies as an input to deactivate the alarm, the deactivating causing the vibration of the device to be suspended, wherein the processor causes a snooze mode to be entered which causes the vibration to be suspended when the physical contact is represented by one of,

a single tap onto a surface of the device; or

a double tap onto the surface of the device; or

three taps onto the surface of the device; or

four taps onto the surface of the device; or

a predetermined set of repeated taps onto the surface of the device.

25. One or more non-transitory computer readable media including instructions which, when executed by a processor, perform the following operations:

receiving an alarm setting that defines a time of day for triggering an alarm on a device for tracking activity data of a user;

activating the alarm upon reaching the time of day defined by the alarm setting, the alarm producing a vibration of the device;

using a sensor to detect a physical contact upon the device, wherein the physical contact is a result of one or more taps on a surface of the device; and

deactivating the alarm if the physical contact qualifies as an input to deactivate the alarm, the deactivating causing the vibration of the device to be suspended.

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EXHIBIT J

U.S. Patent No. 10,713,929

Claim	Fitbit Patent (U.S. Patent No. 8,812,259)
1. An alarm system comprising:	
a primary device having a first controller; and	Remote device 200, e.g smart phone. Smart phone has a controller
at least one secondary device having at least one secondary controller and at least one rendering device;	Activity tracking device 100, has processor 106 and alarm management logic 146. See Fig. 1A. "The alarm management logic 146 can interface with a timekeeping module (e.g. clock, calendar, time zone, etc.) and can trigger activation of an alarm. The alarm can be in the form of an audible alarm or a non-audible alarm." Col. 8, lines 19-25. "A non-audible alarm can . . . be produced by a motor integrated in the activity tracking device 100." Col. 8, lines 26-28.
wherein the first controller is configured to	
(i) determine whether at least one alarm event is set on the primary device,	The remote device 200, which may be a smart phone, communicates with activity tracking device 100 over a Bluetooth connection. Col. 9, 7-8. "Fig. 3 is a block diagram that illustrates the configuring of alarm settings for an activity tracking device 100." Col. 9, line 62 to col. 10, line 46. See Fig. 3 "alarm settings" view 202b.
(ii) establish a wireless communication between the primary device and the secondary device when determination is made that the alarm event has been set on the primary device,	The remote device 200, which may be a smart phone, communicates with activity tracking device 100 over a Bluetooth connection. Col. 9, 7-8.
(iii) generate a first alarm signal including first alarm rendering instructions based on the alarm event set, and	"As shown in view 202c, the activity tracking application 202 then provides GUI controls that allow the user to proceed to set an alarm time ("Set Time") and to select the days on which the alarm is to be active ("Set Days"). In the event the user touches the "Set Time" GUI control, the activity tracking application 202 displays a further view (not shown) that allows the user to set an alarm time, e.g., 6:30 am, 7:30 am, etc. In the event the user touches the "Set Days" GUI control, the activity tracking application 202 displays a further view (not shown) that allows the user to set the days on which the alarm is to be active, e.g., Monday, Tuesday, Monday thru Friday (weekdays), etc. It should be appreciated that more than one alarm, e.g., Alarm #1, Alarm #2, Alarm #3, etc., can be configured in this manner." Col. 10, lines 32-45.

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(iv) transmit the first alarm signal including the first alarm rendering instructions from the primary device to the secondary device, and	See Fig. 3, box 202g: Save Alarm Settings. "Once the alarm settings have been configured, as shown in view 202 g, the alarm settings are saved." Col. 11, lines 10-12. "The alarm settings configured using activity tracking application 202 of remote device 200 are saved to a memory of the remote device." Col. 11, lines 33-35.
wherein the secondary controller is configured to	
(i) generate second alarm rendering instructions for the rendering device based on the first alarm rendering instructions and	"The vibration produced by the motor or motors of the activity tracking device 100 can be managed by the alarm management logic 146 in conjunction with processing by the processor 106." Col. 8. lines 30-33. "FIG. 6 is a flowchart diagram that shows the method operations performed in implementing an alarm in an activity tracking device, in accordance with one embodiment of the present invention." Col. 12, lines 36-39. "In operation 302, a determination is made as to whether the current time of day is the same as the time at which an alarm is set." Col. 12, lines 40-42.
(ii) render the second alarm rendering instructions on the rendering device.	"The motor causes vibration of the housing. The memory stores an alarm setting that defines a time of day for triggering an alarm on the device. The processor activates the alarm upon reaching the time of day defined by the alarm setting, with the alarm causing the motor to produce the vibration of the housing." *Abstract*.