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(54) **PERSON MONITORING SYSTEM AND METHOD OF USE**

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

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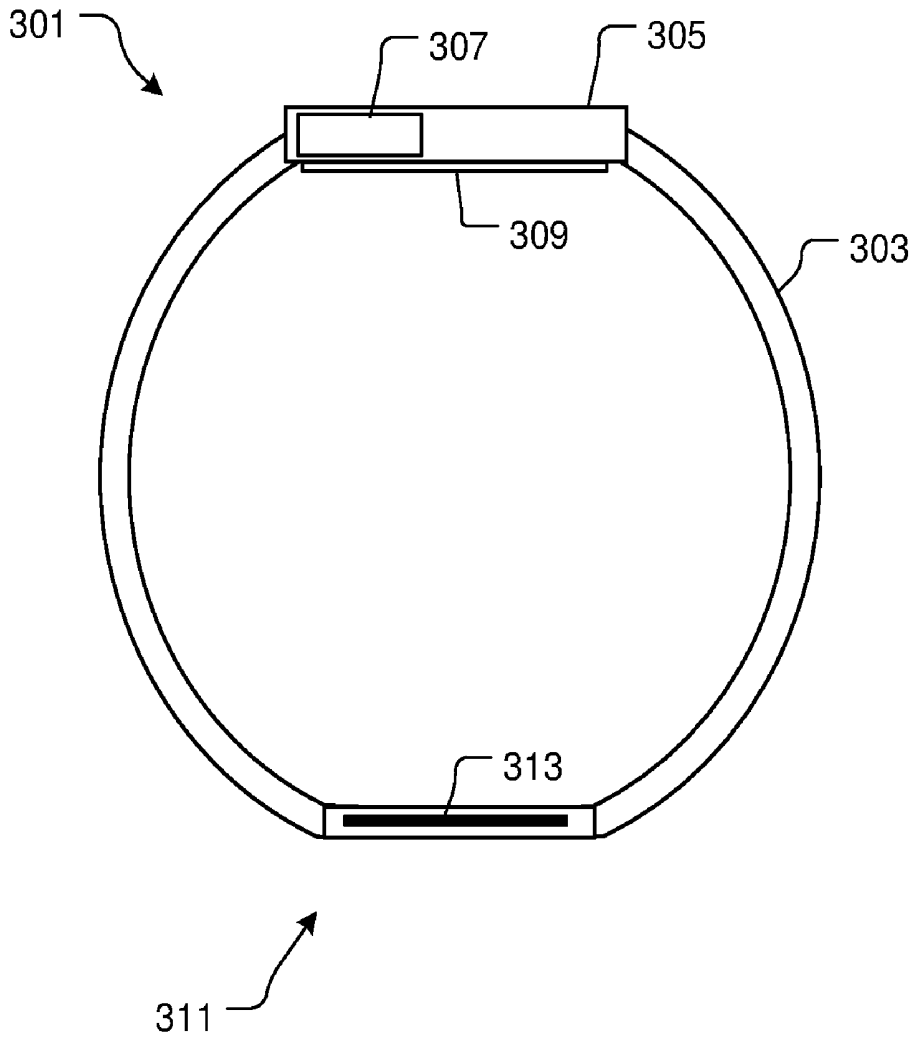
(57) **ABSTRACT**

A monitoring system for persons at suicidal risk, the monitoring system includes a wireless network; a central monitoring station, having a computing device with a display; and a monitoring portal to receive information, the monitoring portal having an alarm to provide an alert based on the information received; a wristband having a unique identifier assigned via the central monitoring station; a control center having a power source and a transceiver to wirelessly communicate with the central monitoring station; a GPS tracking device to provide location information to the central monitoring station; a vital sensor integrally incorporated into the wristband to determine a vital sign; and a lock to secure the wristband to the person, the lock being associated with a key; the alarm function is programmed to provide the alert based on the vital sign hitting a predetermined value.



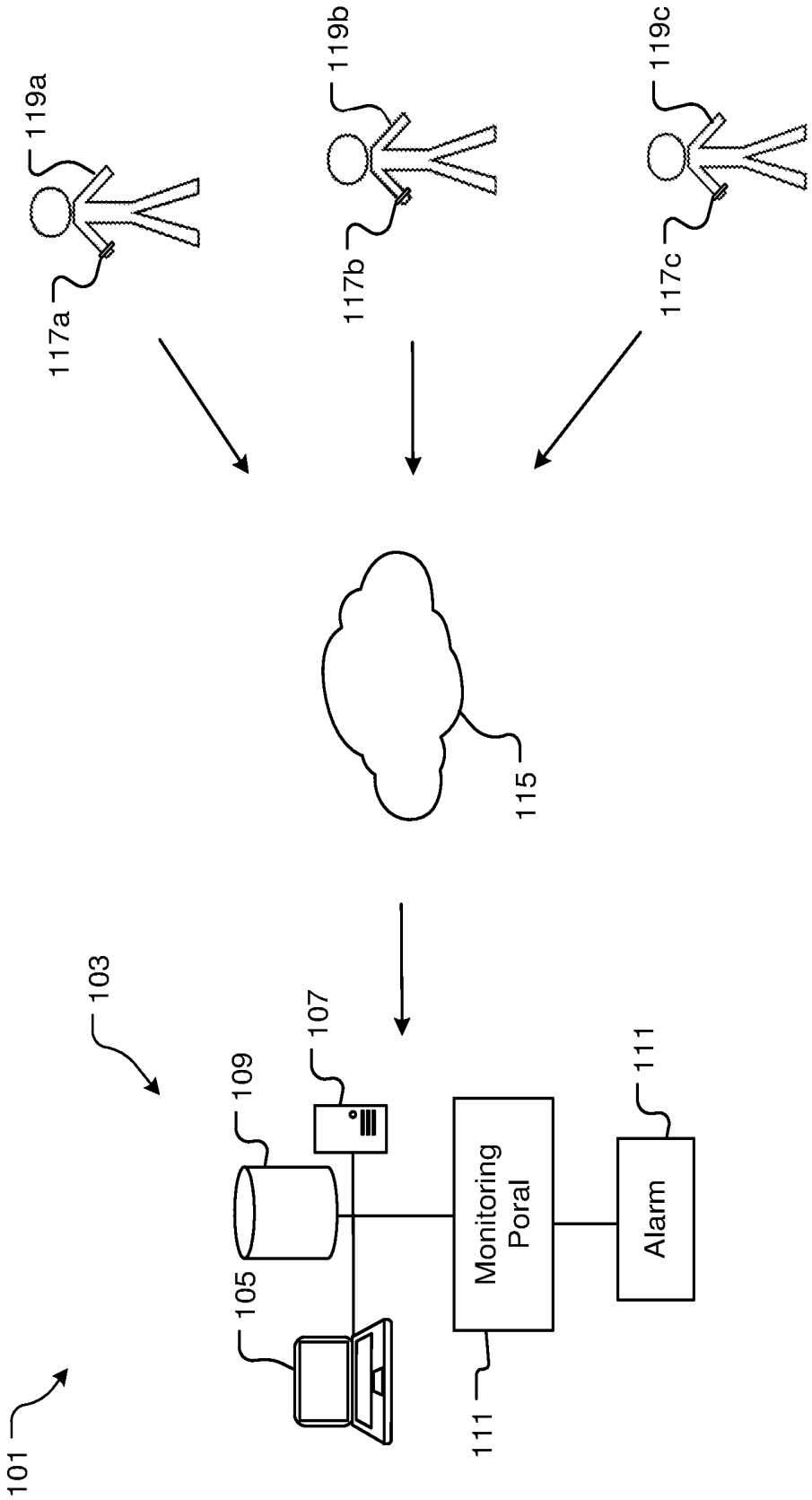

119a
119b
119c
117a
117b
117c
115
103
107
109
111
105
Monitoring Poral
Alarm
111
101

FIG. 1

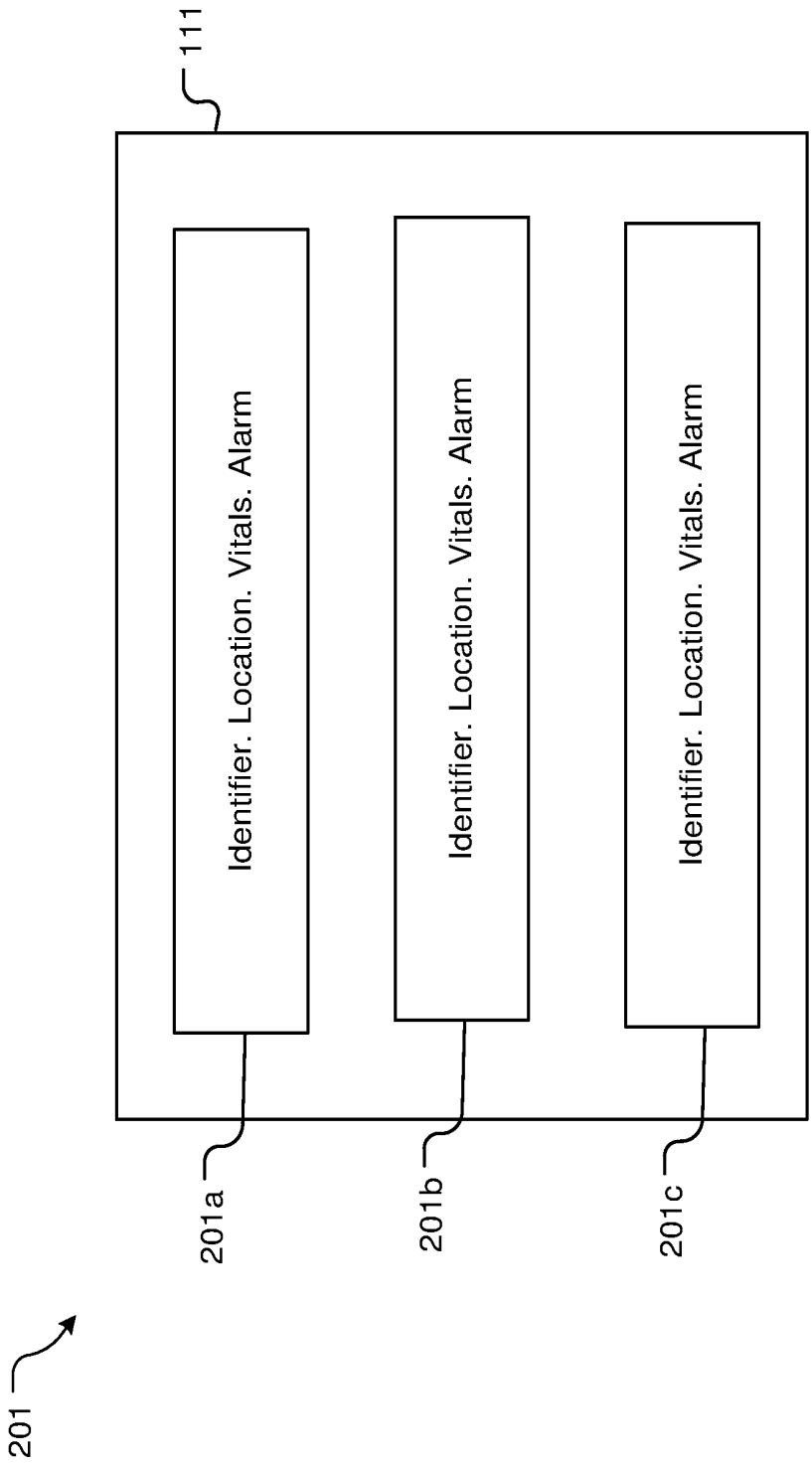

111
Identifier. Location. Vitals. Alarm
Identifier. Location. Vitals. Alarm
Identifier. Location. Vitals. Alarm
201a
201b
201c
201

FIG. 2

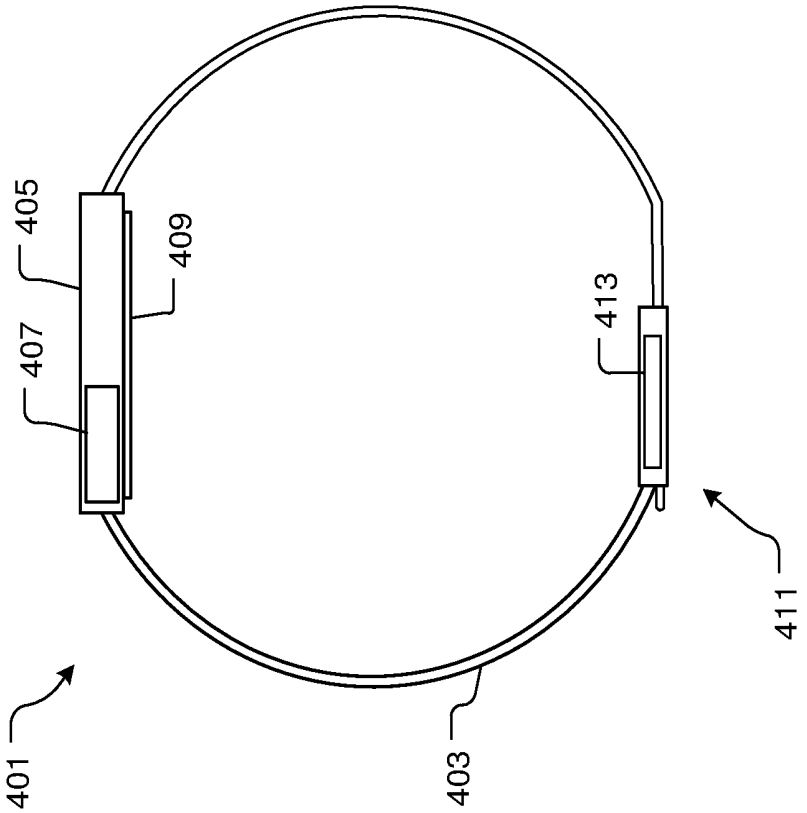


FIG. 4

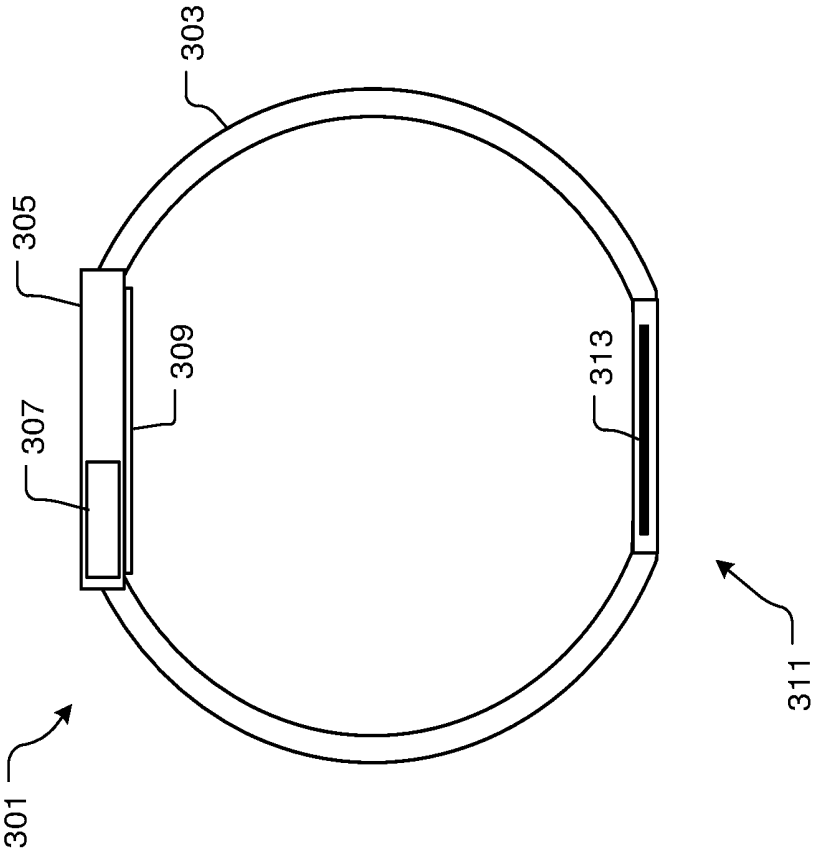


FIG. 3

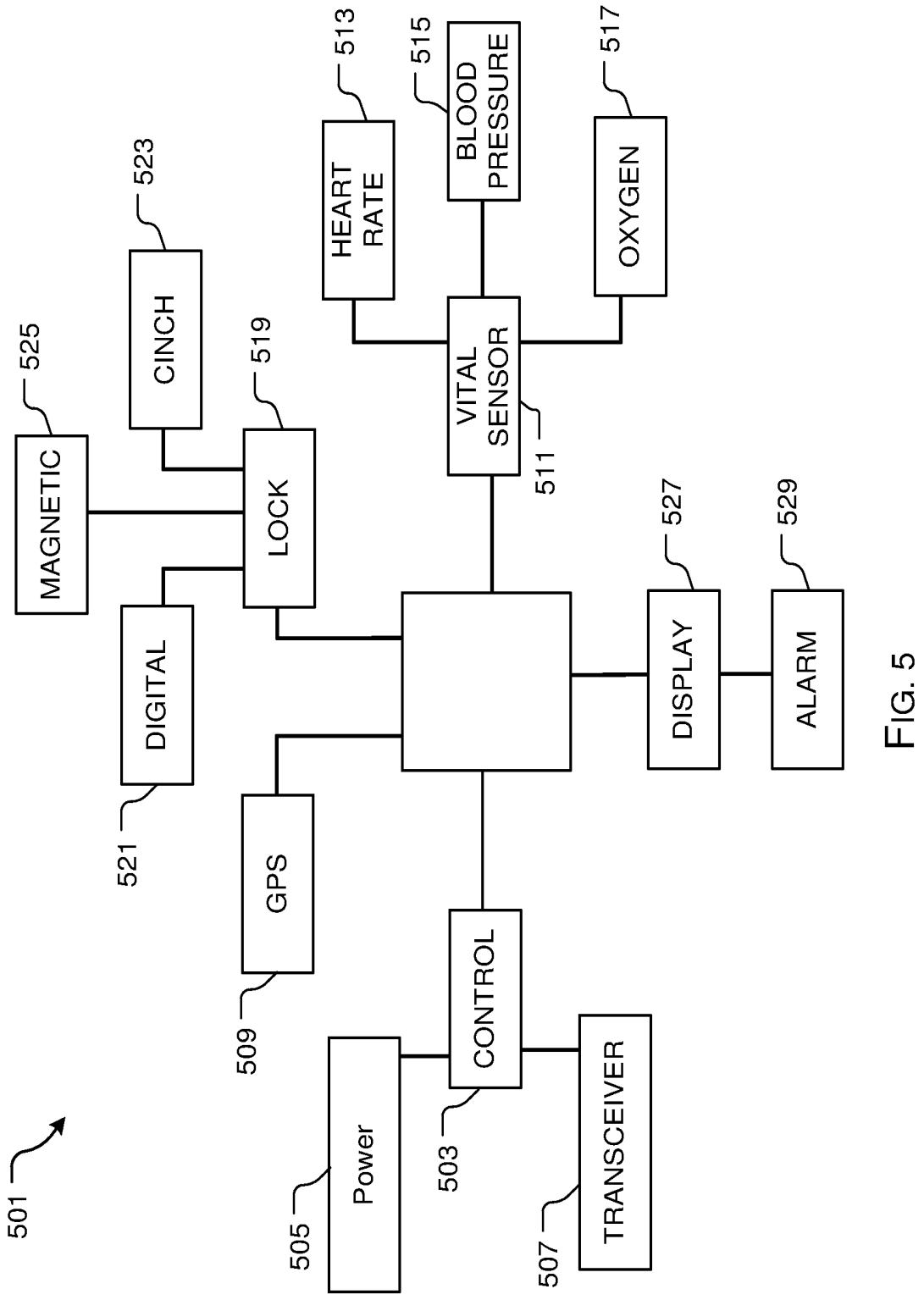

501
505
Power
503
CONTROL
507
TRANSCEIVER
509
GPS
521
DIGITAL
525
MAGNETIC
523
CINCH
519
LOCK
513
HEART RATE
515
BLOOD PRESSURE
517
OXYGEN
VITAL SENSOR
511
527
DISPLAY
529
ALARM

FIG. 5

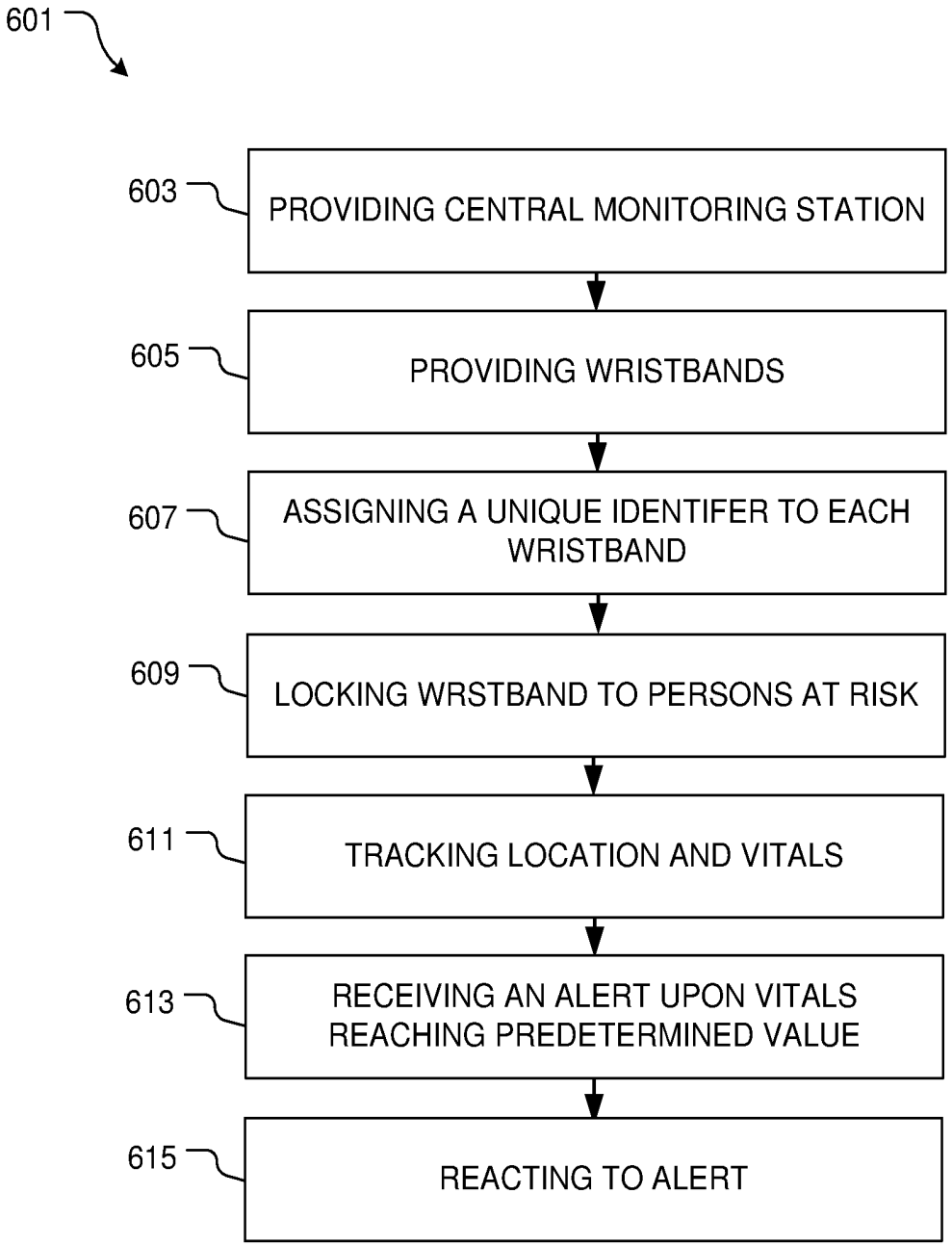

601
603
PROVIDING CENTRAL MONITORING STATION
605
PROVIDING WRISTBANDS
607
ASSIGNING A UNIQUE IDENTIFER TO EACH WRISTBAND
609
LOCKING WRSTBAND TO PERSONS AT RISK
611
TRACKING LOCATION AND VITALS
613
RECEIVING AN ALERT UPON VITALS REACHING PREDETERMINED VALUE
615
REACTING TO ALERT

FIG. 6

PERSON MONITORING SYSTEM AND METHOD OF USE

BACKGROUND

1. Field of the Invention

[0001] The present invention relates generally to patient care systems for persons at risk of suicide, and more specifically, to a monitoring system for tracking locations and vitals associated with persons at risk for the prevention of suicide.

2. Description of Related Art

[0002] Suicide is a devastating problem associated with many government and private agency facilities, such as youth detention centers. These facilities conventionally provide housing and monitoring of person, however, the monitoring is via medical checkups, physically checking in on the persons, and visibly monitoring the persons.

[0003] One of the problems commonly associated with these types of centers is the long periods of time when the individuals are not monitored. For example, the individuals are conventionally left alone at night, providing them with ample time to cause harm to themselves.

[0004] Accordingly, it is desirable to create a system for convenient monitoring from a central location of a plurality of persons. It should be appreciated that the system of the present invention provides a means to monitor a plurality of persons from a central location and is not limited strictly to government or private agency facilities.

DESCRIPTION OF THE DRAWINGS

[0005] The novel features believed characteristic of the embodiments of the present application are set forth in the appended claims. However, the embodiments themselves, as well as a preferred mode of use, and further objectives and advantages thereof, will best be understood by reference to the following detailed description when read in conjunction with the accompanying drawings, wherein:

[0006] FIG. **1** is a simplified schematic of a monitoring system in accordance with a preferred embodiment of the present application;

[0007] FIG. **2** is a simplified example of a monitoring portal of FIG. **1**;

[0008] FIG. **3** is a simplified side view of a wristband of FIG. **1**;

[0009] FIG. **4** is a simplified side view of an alternative embodiment of a wristband of FIG. **1**;

[0010] FIG. **5** is a simplified schematic the features of the wristbands of FIG. **1**; and

[0011] FIG. **6** is a flowchart of the method of use of the system of FIG. **1**.

[0012] While the system and method of use of the present application is susceptible to various modifications and alternative forms, specific embodiments thereof have been shown by way of example in the drawings and are herein described in detail. It should be understood, however, that the description herein of specific embodiments is not intended to limit the invention to the particular embodiment disclosed, but on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the present application as defined by the appended claims.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0013] Illustrative embodiments of the system and method of use of the present application are provided below. It will of course be appreciated that in the development of any actual embodiment, numerous implementation-specific decisions will be made to achieve the developer's specific goals, such as compliance with system-related and business-related constraints, which will vary from one implementation to another. Moreover, it will be appreciated that such a development effort might be complex and time-consuming, but would nevertheless be a routine undertaking for those of ordinary skill in the art having the benefit of this disclosure.

[0014] The system and method of use in accordance with the present application overcomes one or more of the above-discussed problems commonly associated with conventional monitoring systems. Specifically, the present invention provides a means to monitor a location and vital signs of a plurality of persons from a central location, thereby allowing for a fast reaction in the event that a person's vital signs indicate dangerous conditions. These and other unique features of the system and method of use are discussed below and illustrated in the accompanying drawings.

[0015] The system and method of use will be understood, both as to its structure and operation, from the accompanying drawings, taken in conjunction with the accompanying description. Several embodiments of the system are presented herein. It should be understood that various components, parts, and features of the different embodiments may be combined together and/or interchanged with one another, all of which are within the scope of the present application, even though not all variations and particular embodiments are shown in the drawings. It should also be understood that the mixing and matching of features, elements, and/or functions between various embodiments is expressly contemplated herein so that one of ordinary skill in the art would appreciate from this disclosure that the features, elements, and/or functions of one embodiment may be incorporated into another embodiment as appropriate, unless described otherwise.

[0016] The preferred embodiment herein described is not intended to be exhaustive or to limit the invention to the precise form disclosed. It is chosen and described to explain the principles of the invention and its application and practical use to enable others skilled in the art to follow its teachings.

[0017] Referring now to the drawings wherein like reference characters identify corresponding or similar elements throughout the several views, FIG. **1** depicts a simplified schematic of a monitoring system **101** in accordance with a preferred embodiment of the present application. It will be appreciated that system **101** overcomes one or more of the above-listed problems commonly associated with conventional monitoring systems.

[0018] In the contemplated embodiment, system **101** includes a central monitoring station **103** having one or more of a computing device **105**, a server **107**, and a database **109**, wherein monitoring personnel can access information through a portal **111**. It should be appreciated that station **103** can be included in a single computing device accessed by one person, or alternatively, can be multiple computing devices and located within predetermined areas, such as a designated room, wherein a plurality of personnel have

access to the monitoring portal. In the preferred embodiment, portal **111** is configured to provide an alarm **113** based on information receive through a network **115** from one or more wristbands **117***a-c*. It should be appreciated that the one or more wristbands **117***a-c* are assigned unique identifiers to coordinate to persons **119***a-c*, thereby ensuring that station **103** can distinguish information received by each wristband.

[0019] In FIG. **2**, a simplified schematic **201** demonstrates features associated with portal **111**. Portal **111** provides series of information **201***a-c* relating to persons being monitored. Further, each series **201***a-c* can be coordinated with an alarm, thereby providing an alert upon determination that a person's vital signs are showing distress. It should be appreciated that the alert can be visual and/or audio.

[0020] It should further be understood that the initiating of the alarm can be pre-programmed to activate upon a person's pulse dropping or rising to a predetermined value, thereby indicating stress or possible physical harm. In addition, the alarm can be programmed to activate upon a person's blood pressure rising or dropping, or their oxygen levels rising or dropping to pre-established values.

[0021] It should be appreciated that one of the unique features believed characteristic of the present application is the use of a plurality of wristbands configured to lock to a plurality of persons at risk of suicide, wherein vitals and location can be tracked via a central monitoring station.

[0022] In FIG. **3**, a side view of one embodiment of a wristband **301** is shown, wherein a band **303** is configured to secure to a person's wrist and is composed of a tough, durable material, such as a cut-resistance nylon, or other material having wiring or other stainless steel components, making the band difficult to tear, break, or cut. Wristband **301** further includes a housing **305** having the necessary components to communicate with central monitoring station **103** via a control center **307**. Housing **305** further includes one or more vital sensors **309**, such as a heart rate monitor, a blood pressure monitor, and/or a blood oxygen monitor. A lock **311** is further used to lock the wristband to the wearer, wherein the lock is only removeable by a special key associated with the central monitoring station, thereby ensuring that the wearer cannot remove. In this embodiment, a chip **313** is incorporated into the lock **311**, wherein securing of the lock together activates the chip to prevent unlocking. The chip can be magnetic, thereby being removable by a magnetic key, or alternatively, the chip can be digital, wherein a command sent from the central monitoring station (or other electronic device) can be used to remove the wristband.

[0023] In FIG. **4**, an alternative embodiment of a wristband **401** is shown, having a tear/cut resistant band **403** and a housing **405** with a control center **407**, and a vital sensor **409**. In this embodiment, a cinching lock **411** is provided wherein a physical code **413** can be implemented to release the lock **411**. It should be appreciated that any locking device known in the art could be used to achieve the same features discussed herein.

[0024] In FIG. **5**, a simplified schematic **501** shows the features contemplated to be included in the plurality of wristbands included herein. Each wristband includes a control center **503** having a power source **505** and a transceiver **507**, thereby being configured to communicate with the central monitoring station and provide data thereto. Each wristband further includes a GPS unit **509** configured to provide location information to the monitoring station and one or more vital sensors **511** to provide health related information. It should be appreciated that any vital sensor could be used, however, those preferred are heart rate monitors **513**, blood pressure monitors **515**, and blood oxygen level sensors **517**. Lastly, each wristband includes a lock **519** as previously discussed herein, such as a digital lock **521**, a cinching lock **523**, or a magnetic lock **525**. It must be understood that the locks contemplated for use require a key, whether the key be physical or a digital code, to unlock, the key being available only to designated personnel.

[0025] In some embodiments, each wristband further includes a display **527** such as a screen associated with control center **503** to provide the wearer with information such as a time, their vital signs, and any other information. Further, an alarm **529** can be provided directly with the wristband to provide an alert to the wearer upon their vitals reaching a pre-determined value.

[0026] In FIG. **6**, a flowchart **601** depicts a method of use of system **101**. During use, the central monitoring station is established, as shown with box **603**. Each wristband is assigned a unique identifier to coordinate to a wearer, as shown with boxes **605**, **607**. Each wristband is locked onto the associated wearer, thereby providing a means to track their vitals and location via the central monitoring station, as shown with boxes **609**, **611**. If a wearer's vitals drop or rise to a pre-determined value, an alarm is activated, thereby alerting the monitoring station of danger and possible suicidal actions, as shown with box **613**. The personnel can then react to the alert to check on the wearer of the wristband, as shown with box **615**.

[0027] The particular embodiments disclosed above are illustrative only, as the embodiments may be modified and practiced in different but equivalent manners apparent to those skilled in the art having the benefit of the teachings herein. It is therefore evident that the particular embodiments disclosed above may be altered or modified, and all such variations are considered within the scope and spirit of the application. Accordingly, the protection sought herein is as set forth in the description. Although the present embodiments are shown above, they are not limited to just these embodiments, but are amenable to various changes and modifications without departing from the spirit thereof.

What is claimed is:

1. A monitoring system for persons at suicidal risk, the monitoring system comprising:

a wireless network;

a central monitoring station, having:

a computing device with a display; and

a monitoring portal configured to receive information regarding the persons at suicidal risk, the monitoring portal having an alarm function to provide an alert based on the information received;

a wristband having:

a unique identifier assigned via the central monitoring station, the unique identifier relating to a person assigned to the wristband;

a control center having a power source and a transceiver configured to wirelessly communicate with the central monitoring station;

a GPS tracking device configured to provide location information to the central monitoring station;

a vital sensor integrally incorporated into the wristband and configured to determine a vital sign of the person to be transmitted to the central monitoring station; and

a lock to secure the wristband to the person, the lock being associated with a key unavailable to the person;

wherein the alarm function is programmed to provide the alert based on the vital sign hitting a predetermined value.

2. The system of claim **1**, wherein the vital sensor is a heart rate monitor.

3. The system of claim **1**, wherein the vital sensor is a blood pressure monitor.

4. The system of claim **1**, wherein the vital sensor is an oxygen level sensor.

5. The system of claim **1**, wherein the lock is a cinching style lock and the key is a code known to the central monitoring station.

6. The system of claim **1**, wherein the lock is a digital lock and the key is a digital code known by the central monitoring station.

7. The system of claim **1**, wherein the lock is a magnetic lock and the key is a magnetic device configured to unlock the magnetic lock and located at the central monitoring station.

8. A method of monitoring a plurality of suicidal risk persons, the method comprising:

providing a central monitoring station having a computing device configured to receive data relating to the plurality of suicidal risk persons;

providing a wristband configured to wirelessly communicate with the central monitoring station, the wristband having a vital sensor configured to send vital information to the central monitoring station;

locking the wristband to a person, wherein only personnel associated with the central monitoring station have the capability of unlocking the wristband;

tracking the person via a GPS unit of the wristband;

monitoring vitals of the person via the central monitoring station; and

providing an alert upon vital signs reaching a predetermined value, the alert being presented at the central monitoring station.

9. The method of claim **8**, wherein the vital sensor is a heart rate monitor.

10. The method of claim **8**, wherein the vital sensor is a blood pressure monitor.

11. The system of claim **8**, wherein the vital sensor is an oxygen level sensor.

* * * * *

专利名称(译)	人员监控系统和使用方法		
公开(公告)号	US20190216382A1	公开(公告)日	2019-07-18
申请号	US16/246486	申请日	2019-01-12
发明人	BALDWIN, DAN		
IPC分类号	A61B5/16 A61B5/00 A61B5/0205		
CPC分类号	A61B5/7275 A61B5/021 A61B5/02438 A61B5/1112 A61B5/14542 A61B5/165 A61B5/0002 A61B5/0205 A61B5/681 G16H50/30		
优先权	62/616590 2018-01-12 US		
外部链接	Espacenet USPTO		

摘要(译)

一种用于自杀风险人员的监控系统，该监控系统包括无线网络;中央监控站，具有带显示器的计算设备;监控门户网站用于接收信息，监控门户网站具有根据收到的信息提供警报的警报;具有通过中央监控站分配的唯一标识符的腕带;控制中心，具有电源和收发器，以与中央监控站无线通信; GPS跟踪装置，用于向中央监控站提供位置信息;整体结合到腕带中的重要传感器，用于确定生命体征;以及将腕带固定到人身上的锁，锁与钥匙相关联;警报功能被编程为基于命中预定值的生命体征提供警报。