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## ELECTRONIC SANITARY HEALTH PRODUCT

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## ELECTRONIC SANITARY HEALTH PRODUCT

### ABSTRACT

A sanitary health product information system provides information describing a condition of a sanitary health product to a caretaker. The system detects the condition of the sanitary health product, e.g., wetness level or moisture level. On detecting the condition, the system transmits information describing the condition of the sanitary health product to a user or a caretaker. Further, the system presents the information, on a device associated with the caretaker, based on the which the caretaker can take an action, e.g., changing the sanitary health product if the wetness level is high.

### PROBLEM STATEMENT

A diaper or surgical dressing does not provide a readily visible indication of the presence of moisture or excretions. Caretakers rely on physically or visually assessing diapers to determine whether they are soiled and therefore require changing. A similar problem exists with surgical dressings and other types of sanitary health products. Soiled sanitary health products can go unnoticed for several hours or more, exposing a wearer's skin to harsh and irritating effects. A method and system that notifies a caretaker regarding a condition of a sanitary health product, is described.

### SANITARY HEALTH PRODUCT INFORMATION SYSTEM

The system and techniques described in this disclosure relate to a sanitary health product information system that provides information describing a condition of a sanitary health product

to a user. The sanitary health product information system can be implemented for use in an Internet, an intranet, or another client and server environment. The sanitary health product information system can be program instructions implemented locally on a client device or an electronic package connected to a sanitary health product or implemented across a client device and server environment. The client device can be any electronic device such as a mobile device, a smartphone, a tablet, a handheld electronic device, a wearable device, etc.

Fig. 1 illustrates an example method 100 for detecting a condition of a sanitary health product and presenting information regarding the condition to a user, for example a caretaker. Method 100 can be performed by a system that provides information describing the condition of the sanitary health product to the caretaker, e.g., the sanitary health product information system.

As shown in Fig. 1, the system detects a condition of a sanitary health product (block 110). The sanitary health product may worn by a user, e.g., baby, toddler, patient, elderly person, etc. Sanitary health products includes diapers, band-aids, sanitary napkins, medical dressings, gauze, training pants, pads, tampons, etc. The sanitary health product may consist of built-in wetness monitoring sensors, e.g., moisture sensor, humidity sensor, or a pair of wire electrodes running across the length of an absorbing pad. The sensors may be connected to an electronic package that can be a part of the sanitary health product or can be installed separately on the sanitary health product. The electronic package gathers data from the sensors installed in the sanitary health product to determine the condition, e.g., wetness level or moisture level, of the sanitary health product.

Additionally or alternatively, the electronic package may include additional sensors, e.g., temperature sensor, pulse sensor, location sensor, pH sensor, motion sensors, etc. These

additional sensors can determine various conditions of the user, e.g., body temperature, heartbeat rate, current location, sleep state, etc. The electronic package can be installed into the sanitary health product in a way that the electronic package is in contact with the user as well as the sensors in the sanitary health product. For disposable sanitary health products, in order to minimize the amount of disposed electronics, a circuit built with biodegradable organic materials can be wound through the product's absorbent pad that can be connected to a reusable electronic package when the product is worn by the user.

After detecting the condition, the system transmits information describing the condition of the sanitary health product to a device, such as mobile device, laptop, wearable device, tablet, accessible by a caretaker (block 120). The information may include wetness or moisture level, body temperature, heartbeat rate, location, pH, etc. The information can be transmitted to the device in form of digital content, e.g., text message, multimedia message, or document. The electronic package includes a transmitter that can be enabled to communicate with the device over short-range wireless data networks, e.g., Bluetooth or WiFi. Additionally or alternatively, the system can transmit the information to the caretaker as a push notification during certain predetermined alert conditions stored in a memory of the electronic package. The alert conditions can include increase in wetness level of the sanitary health product beyond a threshold level, or high body temperature or heartbeat rate of the user, etc.

The system further presents the information describing the condition of the sanitary health product to the caretaker (block 130). The information can be presented in an application of the device associated with the caretaker. The system may notify the caretaker using a visual alert or audible notification on the device. The caretaker can analyze the information to determine if

any action is required, e.g., changing the sanitary health product if the wetness level is high or providing medical assistance to the user if the body temperature or heartbeat rate is more than normal. The caretaker can also use the information to track the location of the user or to monitor whether the user is awake from a sleep.

Fig. 2 illustrates an example sanitary health product information system. In the figure, the sanitary health product as shown is a diaper 210. The diaper consists of biodegradable organic wire 220 wound through the diaper's absorbent pad and is used to determine the wetness level of the diaper 210. The two ends of the wire 220 are connected to an electronic package 230 using connectors 240. The electronic package 230 can be built-in to the diaper 210 or can be a reusable package installed when the diaper 210 is worn by the baby. The electronic package may also include one or more sensors 250, e.g., temperature sensor or pulse sensor, for determining various conditions related to the baby, e.g., body temperature or heartbeat rate. The electronic package gathers data from wire 220 and the sensors 250 to determine a condition of the diaper 210. The system further uses transmitter 260 to transmit information describing the condition of the diaper 210 to an electronic device 280 associated with a caretaker (step 270). The system presents the information to the caretaker on the device 280. On analyzing the presented information, the caretaker can determine whether the diaper 210 needs to be changed because of high wetness level.

The subject matter described in this disclosure can be implemented in software and/or hardware (for example, computers, circuits, or processors). The subject matter can be implemented on a single device or across multiple devices (for example, a client device and a server device). Devices implementing the subject matter can be connected through a wired

and/or wireless network. Such devices can receive inputs from a user (for example, from a mouse, keyboard, or touchscreen) and produce an output to a user (for example, through a display). Specific examples disclosed are provided for illustrative purposes and do not limit the scope of the disclosure.

DRAWINGS

100

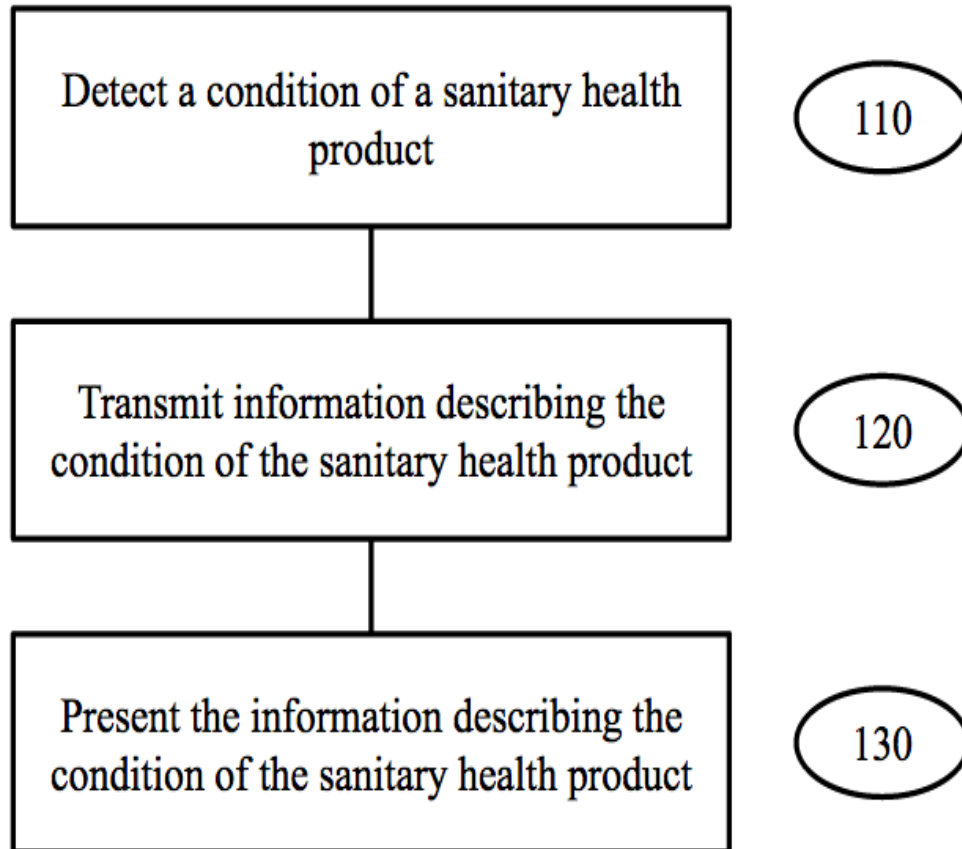


Fig. 1

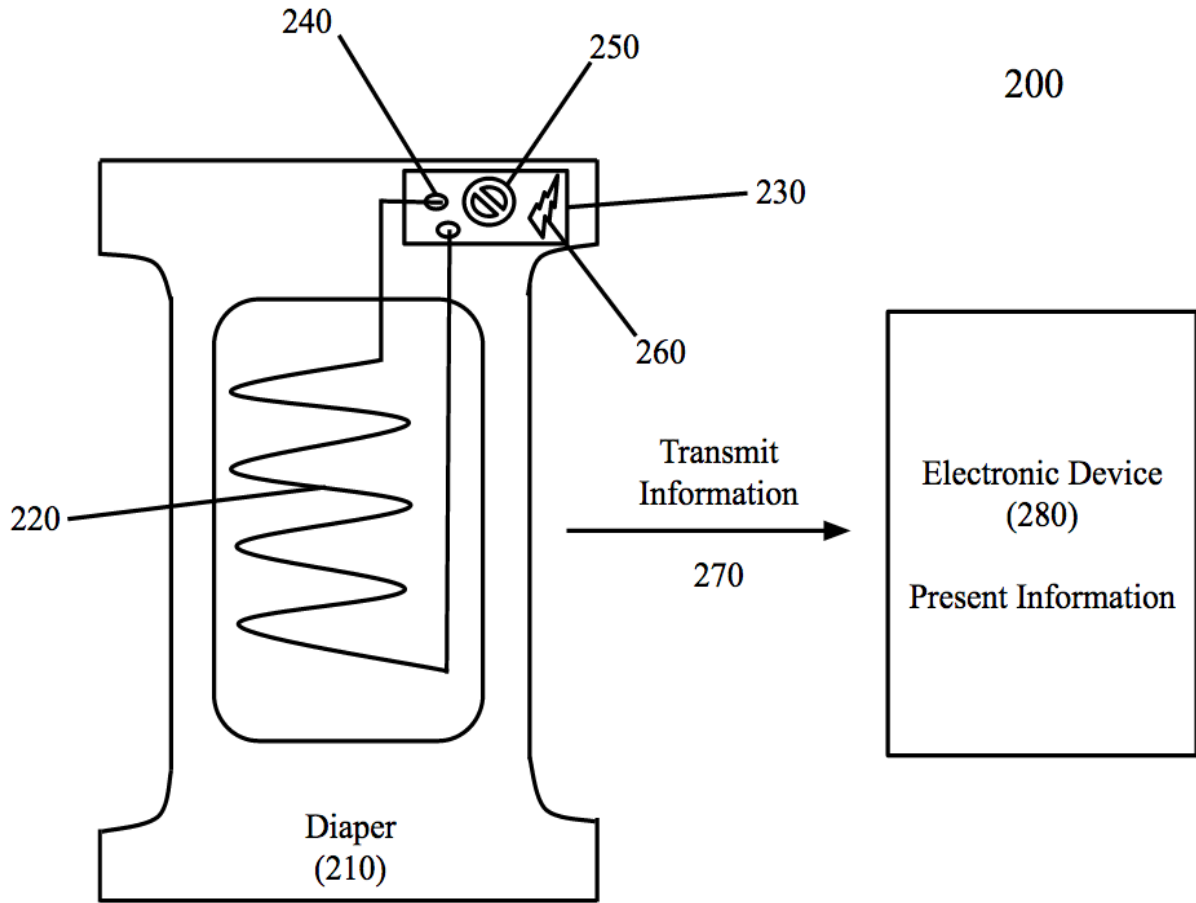


Fig. 2