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(54) **Titre : SYSTEME DE SOINS BUCCO-DENTAIRES**

(54) **Title: ORAL CARE SYSTEM**

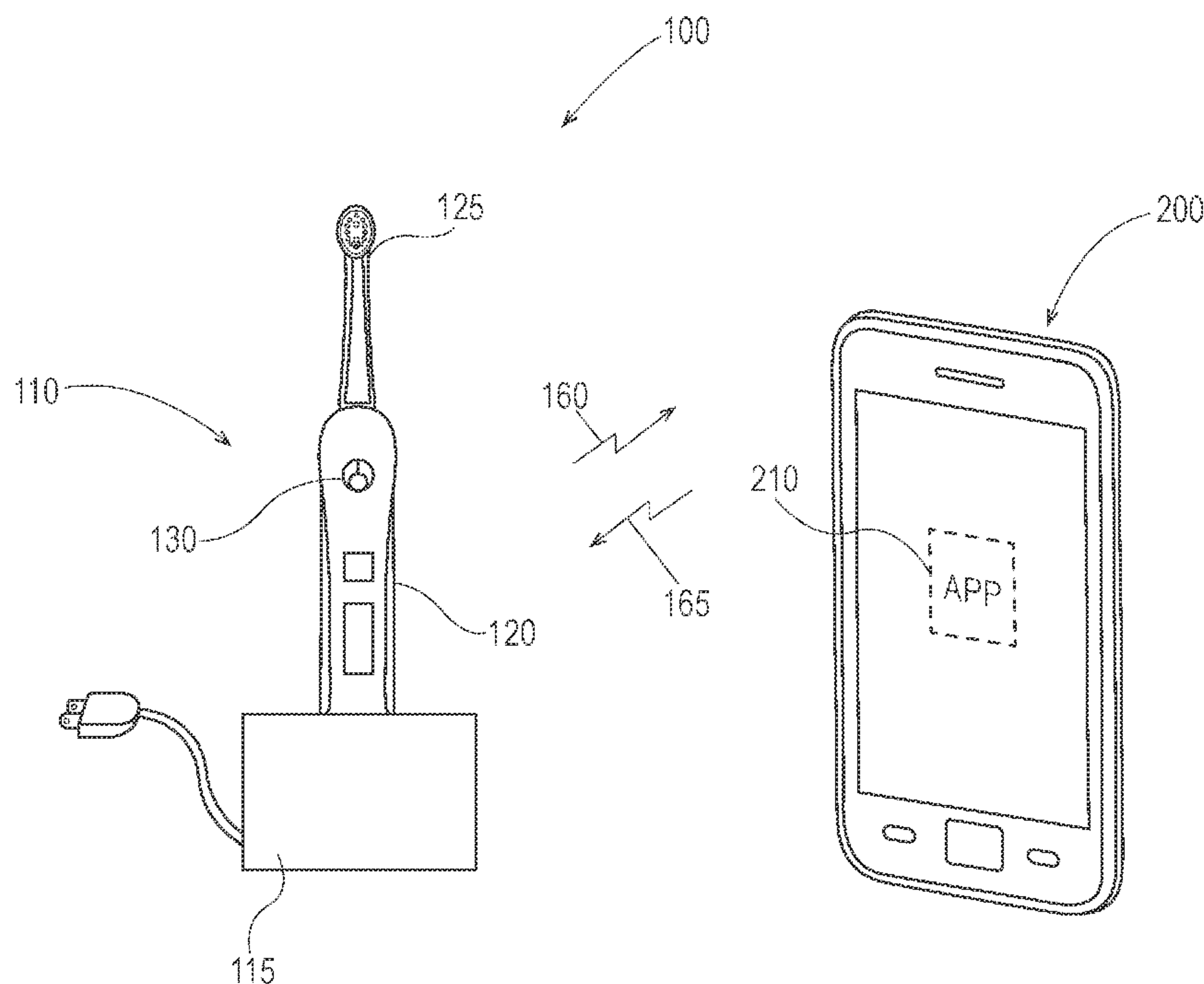


Fig. 1

(57) **Abrégé/Abstract:**

An oral care system (100) is disclosed. The oral care system includes an electric toothbrush (110) having an energy source; an electronic circuit including a microcontroller and one or more electric loads; and at least one sensor for providing a signal indicating



(57) Abrégé(suite)/Abstract(continued):

a relevant change of an external condition; and a mobile computing device (200) that stores a computer application (210). In response to a relevant change in an external condition, the signal has an energy content allowing the microcontroller to activate a ready mode, the ready mode causing the system to perform at least the following prior to turning the toothbrush (110) on: switching on one or more of the electric loads for a preset period; enabling a wireless communication link between toothbrush (110) and device (200); and exchanging data between toothbrush (110) and device (200) as part of the wireless communication.

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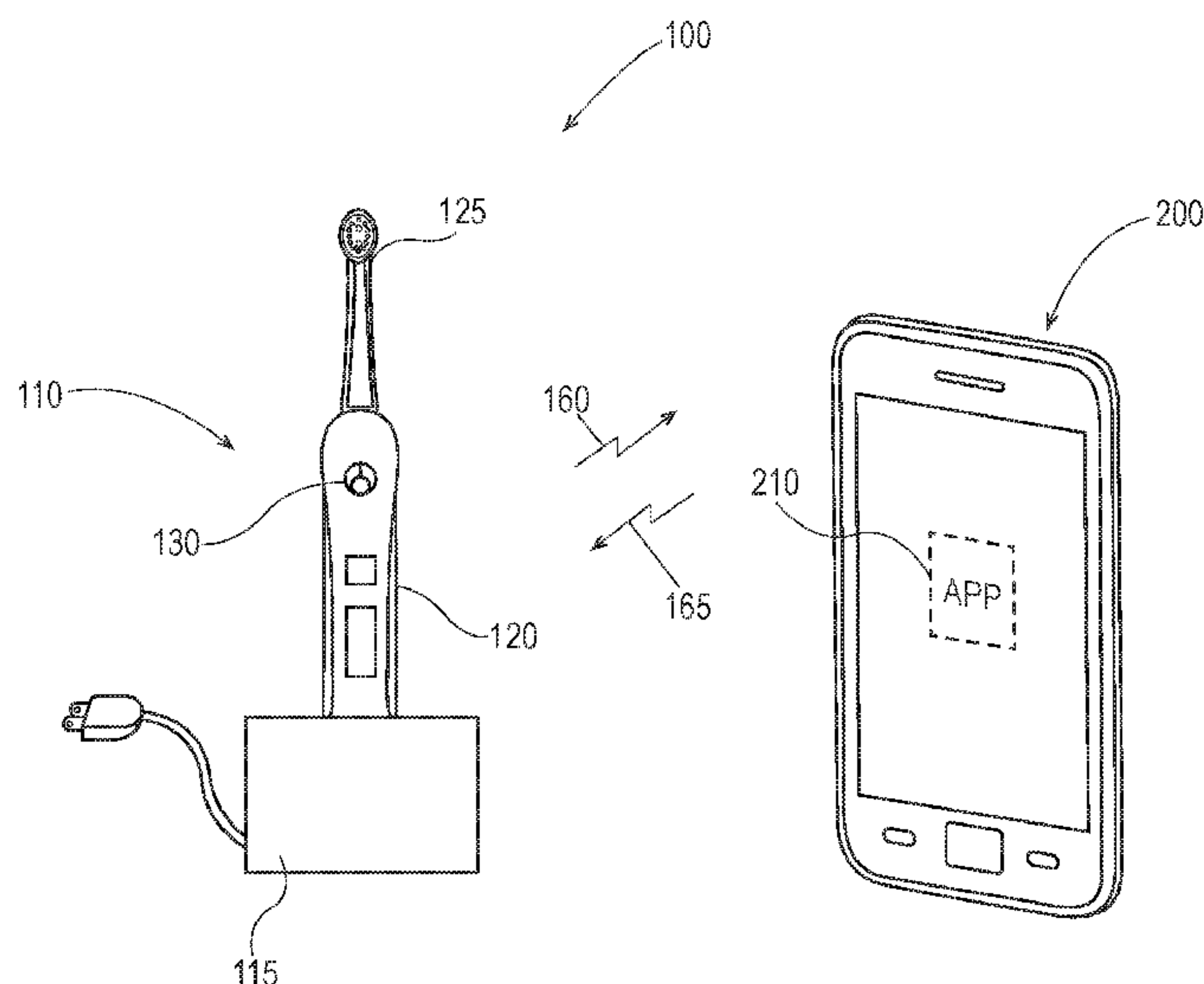


Fig. 1

(57) Abstract: An oral care system (100) is dis-
closed. The oral care system includes an electric
toothbrush (110) having an energy source; an elec-
tronic circuit including a microcontroller and one or
more electric loads; and at least one sensor for
providing a signal indicating a relevant change of
an external condition; and a mobile computing
device (200) that stores a computer application
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device (200); and exchanging data between tooth-
brush (110) and device (200) as part of the wireless
communication.

ORAL CARE SYSTEM

FIELD OF THE INVENTION

The present disclosure relates to an oral care system. More particularly, the present disclosure relates to techniques, methods, systems and mechanisms for performing wireless communication between an electric toothbrush and a mobile computing device.

BACKGROUND OF THE INVENTION

Consumers use numerous personal care products in their bathrooms, where space can be very limited. There is a desire to provide products and methods for delivering useful personal care (or other) information to consumers before, during, or after use of one or more personal care products. As is now known in the computing and mobile handset and smart phone industries, a new computing paradigm is emerging and is being driven by the proliferation of software applications now commonly known as apps for handheld or mobile devices. This proliferation is directly tied to consumer adoption of smart phones and tablets. Companies are now creating their own unique apps that relate to and in some cases interact with products and/or services offered by the company, including personal care products. Even when free, it is often difficult to achieve a high penetration rate and consumer adoption rate. As such, there remains a need for an app that works with an electric toothbrush that can provide consumers with increased flexibility, improved interoperability and improved user experience prior to the start of brushing.

SUMMARY OF THE INVENTION

According to one embodiment, an oral care system is provided. The oral care system includes an electric toothbrush having an energy source; an electronic circuit including a microcontroller and one or more electric loads; and at least one sensor for providing a signal indicating a relevant change of an external condition; and a mobile computing device that stores a computer application. In response to a relevant change in an external condition, the signal has an energy content allowing the microcontroller to activate a ready mode, the ready mode causing the system to perform at least the following prior to turning the toothbrush on: switching on one or more of the electric loads for a preset period; enabling a wireless communication link between toothbrush and

device; and exchanging data between toothbrush and device as part of the wireless communication.

According to another embodiment, an oral care system is provided. The oral care system includes an electric toothbrush having an energy source; an electronic circuit including a microcontroller and one or more electric loads; and at least one sensor for providing a signal indicating a relevant change of an external condition; and a mobile computing device that stores a computer application. In response to a relevant change in an external condition, the signal has an energy content allowing the microcontroller to activate a ready mode, the ready mode causing the system to perform at least the following prior to turning the toothbrush on: switching on one or more of the electric loads for a preset period; establishing wireless communication between toothbrush and device; and launching the application to the foreground of the device.

According to yet another embodiment, a method of operating an oral care system is also provided. The method includes the steps of a) providing an electric toothbrush and a mobile computing device that stores a computer application; b) activating a ready mode in response to a signal indicating a relevant change of an external condition; and c) triggering the system to perform at least the following prior to turning the toothbrush on: switching on one or more of the electric loads for a preset period; enabling a wireless communication between the electric toothbrush and the mobile computing device; and exchanging data between toothbrush and device as part of the wireless communication.

These and other features, aspects and advantages of specific embodiments will become evident to those skilled in the art from a reading of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

While the specification concludes with claims which particularly point out and distinctly claim the present invention, it is believed that the present invention will be better understood from the following description of preferred embodiments, taken in conjunction with the accompanying drawings, in which like reference numerals identify identical elements and wherein:

FIG. 1 is an illustration of an oral care system according to one or more embodiments illustrated and described herein;

FIG. 2 is a schematic depiction of a electric toothbrush according to one or more embodiments illustrated and described herein;

FIG. 3 depicts an interface on a mobile computing device for accessing a computer application according to one or more embodiments illustrated and described herein;

FIG. 4 depicts an example user interface that is displayed by a mobile computing device upon making a wireless connection according to one or more embodiments illustrated and described herein; and

FIG. 5 is a flow chart indicating an example embodiment of operating an oral care system according to one or more embodiments illustrated and described herein.

10 DETAILED DESCRIPTION OF THE INVENTION

The following text sets forth a broad description of numerous different embodiments of the present disclosure. The description is to be construed as exemplary only and does not describe every possible embodiment since describing every possible embodiment would be impractical, if not impossible. It will be understood that any feature, characteristic, component, composition, ingredient, product, step or methodology described herein can be deleted, combined with or substituted for, in whole or part, any other feature, characteristic, component, composition, ingredient, product, step or methodology described herein. Numerous alternative embodiments could be implemented, using either current technology or technology developed after the filing date of this patent, which would still fall within the scope of the claims. All publications and patents cited herein are incorporated herein by reference.

According to the present disclosure, one example of an oral care system includes an electric toothbrush and a mobile computing device. Although the embodiments described herein in detail are directed toward a toothbrush, the disclosure is applicable to any personal hygiene device, such as for example an oral irrigator, a flossing device, an electric shaver, an electric epilator, a skin treatment device, etc or any other personal hygiene device. In addition, toothbrushes that have manually operated heads, but include electronics, are included in the term “electric” toothbrush, such as for example, a manual toothbrush with electronics embedded in the handle. Moreover, the term toothbrush includes handles (motorized handles if the toothbrush has an motorized head) having other oral care implements attached thereto, such as tongue cleaners, floss attachments, gum massagers, polishing elements, etc. Therefore use of the term toothbrush includes a toothbrush handle having an attachment that may not be a “brush.”

In one embodiment, wireless communication between the toothbrush and the mobile computing device may be established through Bluetooth or Bluetooth LE. Bluetooth LE is intended to provide considerably reduced power consumption and cost while maintaining a similar communication range. A device that can implement both is known as Bluetooth 4.0 dual-mode devices. Bluetooth technology is fundamentally aimed at performing communication over a short distance, for example, within 10 m. This range can be increased to 100 m (for Bluetooth) and 50 m (for Bluetooth LE) according to the applied output power. According to the Bluetooth standard, data transmission using Bluetooth has a maximum rate of 64 Kbps in the case of synchronous (voice) channel transmission and a maximum rate of 723.2 Kbps in the case of asynchronous (data) channel transmission. Further, because Bluetooth technology uses frequency-hopping spread spectrum technology, security is improved in comparison with other existing wireless communication protocols. Moreover, since Bluetooth technology can transmit voices as well as character data using Continuous Variable Slope Delta (CVSD) modulation, voice coding is improved.

The specifications of Bluetooth provide for the possibility of remotely controlling a remote device over a bidirectional wireless connection. In practice, the remote device is usually a mobile telephone or a computer peripheral, however the Bluetooth specifications are not limited to appliances of that type and they include in particular profiles that are compatible with transmitting high-quality coded multichannel audio streams (advanced audio distribution profile (A2DP)), and also profiles that provide interoperability of Bluetooth appliances with audio and video control functions (audio video remote control profile (AVRCP)).

Bluetooth technology is particularly advantageous given its universal and evolving nature, the existence of numerous functions, and also of numerous components specially designed for implementing it, which components are also inexpensive. For example, mobile computing devices having any one of the following operating systems support Bluetooth LE, iOS, Android, Windows Phone and BlackBerry, OS X and Windows 8.

Nevertheless, this choice of technology is not limiting in anyway, and the wireless connection may be implemented by means of other wireless transmission techniques, providing such techniques present a data rate that is sufficient to enable a continuous data

stream to be transmitted (e.g. high-quality digital audio or video signals): this applies for example to the so-called "WiFi" IEEE 802.11 standard (ISO/IEC 8802-11).

As used herein, the term "memory" refers to a volatile or non-volatile storage media, such as ROM, SRAM, DRAM, and/or other types of RAM, flash memory, secure digital (SD) memory, registers, compact discs (CD), digital versatile discs (DVD), and/or other types of non-transitory computer-readable mediums. As is well known in the art, memory may include a plurality of distributed memory coupled via electrical circuitry. These non-transitory computer-readable mediums may reside within the mobile computing device and/or external to the mobile computing device. Additionally, the memory component may be configured to store operating logic and a computer application.

As used herein, the term "mobile computing device" may include a mobile telephone, personal digital assistant, laptop computer, tablet, a game console (for example, NINTENDO DS, NINTENDO 3DS or SONY PSP), smart phone (for example, iPhone® or Android phone), netbooks, GPS devices, e-readers, iPads® and/or other mobile device that can be connected to the Internet or one or more computer networks. A mobile computing device may have a memory that stores a computer application. A mobile computing device may also be realized by a proprietary device.

Referring now to FIG. 1, an oral care system 100 is shown including a rechargeable electric toothbrush 110 and a mobile computing device 200 in accordance with one embodiment of the present disclosure. In one embodiment, the electric toothbrush 110 includes a charging base 115, a motorized handle 120, and a head 125. In one embodiment, the toothbrush 110 is arranged to be positioned in the charging base 115 which can transfer power to the toothbrush 110 in order to charge a battery of the toothbrush 110. In one embodiment, toothbrush 110 may also include a user interface, for example a button 130, that can be activated by a user. Toothbrush 110 may also include wireless communications capabilities to communicate with mobile computing device 200 via wireless data signals 160, 165. Wireless communication 160 and 165 between the toothbrush 110 and the mobile computing device 200 is a bidirectional communication allowing data to be communicated both to and from the toothbrush 110, for example through Bluetooth, WiFi, WLAN, LAN, cellular, or any type of radio communication.

In one embodiment, a Bluetooth module (not shown) in the toothbrush 110 performs Bluetooth communication with a Bluetooth module (not shown) of the mobile computing device 200 according to Bluetooth protocol. However, before toothbrush 110 and mobile computing device 200 are able to communicate with each other through Bluetooth, the toothbrush 110 and the mobile computing device 200 must go through an initial, one-time pairing procedure using Bluetooth LE “pairing procedure” that allows one device to associate itself with another. According to the present disclosure, the traditional Bluetooth pairing process where you need to enter a PIN code is not used. Bluetooth LE provides the possibility to exchange data without entering a PIN code. In order to “pair” the toothbrush 110 and the mobile computing device 200 according to the present disclosure, the user must first switch on toothbrush 110 and the application located on the mobile computing device 210 waits for the toothbrush 110 to save the UUID (Unique ID) of the toothbrush in order to recognize the toothbrush automatically during subsequent uses.

As seen in FIG. 2, the toothbrush 110 may also include an electronic circuit 220 that may comprise a microcontroller (not shown), at least one electric load 240, at least a first sensor 250 for providing a first signal indicating a relevant change of a first external condition and an energy source 260. In one embodiment, the first sensor 250 may provide the first signal, when a respective sensor value crosses a predetermined threshold value, thus indicating the relevant change. Exemplary sensors include, but are not limited to, light sensors, electromagnetic field sensors such as Hall sensors, capacitance sensors, resistance sensors, inductive sensors, humidity sensors, movement or acceleration or inclination sensors, pressure sensors, gas sensors, vibration sensors, and temperature sensors. It is also possible to measure a change in the charging status, where the charging is done by a charging base in particular via inductive charging, e.g. using a voltage or current sensor. In another embodiment, the sensor can be an internal clock, which can provide the first signal at a predetermined time every day or at certain days of the week. The internal clock may in particular be programmable to allow a user to set the time and or days at which the first signal is provided. The relevant change of the external condition is then the change in time with respect to a predetermined time. In some embodiments, the electric toothbrush 110 may include at least a second sensor for monitoring a second external condition and for providing a second signal in case the second signal has changed in a relevant manner. The second sensor is in particular different to the first

sensor so that it is sensitive to a relevant change of a different external condition. In one embodiment, the first sensor 250 may thus be sensitive to a change in the ambient light condition if it is realized as a light sensor (for example, including a photodiode). In another embodiment, the first sensor 250 may be a capacitive sensor, the first sensor 250
 5 may be sensitive to changes in its environment, for example, may detect the presence of the hand of a user in its close proximity. In another embodiment, the first sensor 250 may be a position or acceleration or inclination detector, the first sensor 250 may detect when the electric toothbrush 110 is moved off of the charging base 115.

Still referring to FIG. 2, the electronic circuit 220 may include a microcontroller
 10 and a control circuit 225 for controlling, for example, a display or light emitting elements or an audio unit for reproduction of audible signals. In some embodiments, the electronic circuit 220 includes at least two electric loads 240, 245 (for example, at least one light emitting element 245 and a display 240) or even more electric loads 240, 245, 246 (including a further light emission element 246). In some embodiments, the electric load
 15 240 may be one from the group consisting of light emitting elements, information displaying elements, and audio and/or video signal reproducing elements (for example a loudspeaker). In one example, the handle 120 of the electric toothbrush 115 may include the word “Bluetooth” with light emitting elements above and below the text. In embodiments with two or more electric loads, each of the electric loads may be one from
 20 the group previously listed.

In another embodiment, the electric toothbrush 110 may include at least a second sensor 255 for providing a second signal indicating a relevant change of a second external condition different to the first external condition. The relevant change may again be determined by a sensor value crossing a predetermined threshold value. The electronic
 25 circuit 220 may be coupled to the energy source 260 and to the first sensor 250 (and in some embodiments, to a second sensor 255).

FIG. 1 further depicts mobile computing device 200 including an application program (“app”) 210, for example an oral care or ORAL B app, for causing the mobile computing device to display information derived from the data signals 160, 165 and
 30 related to the toothbrush. In another embodiment, the application program 210 may also display information not related to electric toothbrush 110 or oral care in general, but that a user finds interesting, for example, news, weather or sports information. Each operating system associated with mobile computing devices typically has its own “app” distribution

system, often referred to as an “App Store”. APPLE sells and distributes apps through its iTunes® online distribution platform. ANDROID based devices use the ‘Play Store’ to distribute apps. In addition, there are many web sites that provide the ability to download associated apps, either through direct download or a link to an associated distribution system.

FIG. 3 depicts an interface for accessing the ORAL B application 210. As illustrated, the mobile computing device 200 is configured to provide an interface (for example, via the operating system). The interface may be configured to provide the user with access to one or more computer applications 215 that are stored on the mobile computing device 200. As illustrated, the mobile computing device 200 may include and provide options to access a contacts application, a settings application, a camera application, a maps application, a calendar application, a clock application and an oral care application. As illustrated, the oral care application 210 may be accessed by selection of the ORAL B application option.

In one embodiment, the electric toothbrush 110 is positioned in or on charging base 115 waiting for a relevant change of an external condition. At this time, the toothbrush is in a “sleep mode.” A sleep mode is a mode of the electric toothbrush 110 in which it at least consumes in average less energy from an energy source than in any other mode, in particular the toothbrush 110 may not consume any energy at all in the sleep mode. The provision of a sleep mode at least provides a slower discharge of the energy source in comparison to a toothbrush always being in an ON mode. In some embodiments, the electronic circuit 220 may be completely switched off in the sleep mode and the first signal (for example, provided by a light sensor) may comprise enough energy content to activate the electronic circuit 220. Alternatively, the electronic circuit 220 may have switched off main energy consuming parts such as a DC-DC converter and may in the sleep mode only monitor the first sensor 250, which can be realized with very low energy consumption.

According to the present disclosure, the electric toothbrush 110 may be configured to automatically initiate a “ready mode” when a relevant change of at least a first external condition is detected. A ready mode is a pre-brushing mode in which the electric toothbrush 110 consumes in average more energy than in the sleep mode. In one embodiment, the ready mode is initiated upon a first signal from the first sensor 250 indicating that the first external condition has changed in a relevant manner (i.e. a

threshold value was crossed). Examples of relevant changes of external conditions include but are not limited to, changes in the ambient light condition, for example turning on the lights in a bathroom (photosensor); proximity of a user's hand or gripping of the toothbrush handle (capacitive sensor); lifting or moving the toothbrush off of its charging
5 base (charge detection by voltage / current sensing); lifting or moving the toothbrush when not in or on its charging base (acceleration sensor or gyroscope); sound recognition or noise being made in proximity to brush (microphone); a detected change in the load on the brush head by the pressure control system; a change in an external wireless signal as RFID or NFC communication, which may be used to communicate with the refill or other
10 accessories, or changing the preset condition of the handle (mode) by a user pressing a button. For purposes of the present disclosure, a signal indicating a relevant change of an external condition does not include turning on the motor of the toothbrush.

The benefits of having a ready mode that is a pre-brushing mode, i.e. occurs prior to switching on the motor of the toothbrush in order to begin brushing, are explained
15 below. For example, enabling a wireless communication link between the toothbrush 110 and the mobile computing device 200 takes time and does not happen instantaneous or in parallel. If this wireless connection is established in parallel to switching on the motor of the toothbrush 110, the mobile computing device 200 will not be able to react or interact with the toothbrush 110 immediately during the first period of use. This may lead to
20 dissatisfaction or confusion from the user who has turned on the toothbrush 110 and is waiting for the wireless connection to be established (for example, waiting with the toothbrush in a user's mouth) but is not able to take advantage of all of the features of the oral care system. In order to ensure the application on the mobile computing device starts with the right information of personal usage data and toothbrush data, the data is
25 exchanged prior to brushing in the ready mode.

Therefore it is beneficial to have a ready mode additionally to the operating mode and the sleep mode to save energy. This ready mode enables establishing the wireless connection in the background and preparing the oral care system without interference to the normal brushing routine of the user. The motor is still switched off during this time
30 period till the user is ready to brush after applying paste or water to the brush head.

In one embodiment, a series of actions may be automatically started after initialization of the ready mode. For example, when a relevant change of the first external condition is indicated (for example, removing the toothbrush 110 from the charging base

115) the ready mode may include a short activation of at least one light emission element 245 for a preset period so that, for example, the user is informed that the “toothbrush is ready” via light emitting element(s) on the handle 120 of the toothbrush 110.

In one embodiment, the ready mode may also include enabling a wireless
5 communication between the toothbrush 110 and the mobile computing device 200. For example, the Bluetooth software (in the toothbrush) may turn on the antenna and begin searching for a partner, i.e. the mobile computing device 200. Once the toothbrush 110 and the mobile computing device 200 are ready to connect, the ready mode may also include the exchanging of data between the toothbrush 110 and the mobile computing
10 device 200 as part of the wireless communication. In other words, the toothbrush 110 is talking or communicating with the mobile computing device 200 and can begin sending internal data from the toothbrush 110 to the device without starting the application 210 on the device, i.e. the application 210 is running in the background.

Examples of the type of internal data include the speed, amplitude, or frequency
15 of movement of a bristle holder (or toothbrush head); timing information relating to the number of times the toothbrush has been used, a duration for each use and a time for each use; the force exerted by the toothbrush on a tooth, the status of a feature or function of the toothbrush (for example, the toothbrush is energized or a feature of the toothbrush is activated or deactivated); the status of a power source (for example, a battery that is fully
20 charged, 50% charged, or needs to be recharged or replaced); the type of brush head or cleaning elements (for example, massaging elements, polishing elements, etc.) that are coupled to the electric toothbrush, and/or the configuration of the bristle field, etc; and any aspect concerning the features of the toothbrush, the performance of the toothbrush, or the status of the toothbrush or any of its components. In some embodiments, the
25 internal or usage data may also include regimen data for a user or multiple users.

In one embodiment, the multiple users, each with his or her own oral care implements including a motorized head, can use one motorized handle. The implement can include a sensor, which can identify the user along with indicating the relevant change in internal condition. In one example, the implement and/or the motorized handle
30 can use RFID or NFC communication.

In one embodiment, the ready mode may be limited to a predetermined period of time, for example, in one embodiment the ready mode may be from about 1 second to about 30 seconds, in another embodiment from about 1 second to about 20 seconds and in

another embodiment from about 1 second to about 10 seconds. The ready mode may also be terminated at any time by pressing button 130 to switch the toothbrush ON or placing the toothbrush 110 back on the charging base 115.

In another embodiment, the ready mode may also include automatically
5 establishing a wireless communication between the toothbrush 110 and the mobile computing device 200 in response to activation of the ready mode. For example, the Bluetooth module in the toothbrush 110 may turn on and begin searching for a partner, i.e. the mobile computing device 200. The application 210 turns on the mobile computing device's Bluetooth module and also sends commands to the toothbrush's
10 Bluetooth module. Thereafter, the application 210 is launched to the foreground of the mobile computing device 200 as part of the ready mode. This automatic launching of the application provides a very desirable user experience. For example, prior to beginning to brush, the application is launched and can begin providing coaching, data, targets, goals, brushing history and other features of the application before the motor of the brush is
15 turned on. Additionally, since the communication is bidirectional, the application 210 can transmit data back to the toothbrush 110 which can be used to configure features of the toothbrush 110 and allow the user to change or adapt the operation of the toothbrush thru use of the application 210.

In one embodiment, as shown in FIG. 4, a display of the mobile computing device
20 200 may output a special application screen, for example "Good Morning - - Let's start brushing", in the case where the application 210 is launched in response to a relevant change in an external condition.

Fig. 5 is a flow chart diagram schematically depicting an example embodiment of operating an oral care system in accordance with the present disclosure. In a first state
25 500, the electric toothbrush is in a sleep mode in which the electronic circuit in average consumes less energy than in a ready mode. In the event that a change of a first external condition 350 triggers a first sensor 330 to provide a first signal, the electric toothbrush switches into a ready mode 510. Optionally, the electric toothbrush may switch into the ready mode 510 also on reception of a second signal from a second sensor 340 indicating
30 a change of a second external condition 360. After activating the ready mode 510, the oral care system may perform at least the following prior to a user turning the toothbrush on, switching on one or more of the electric loads for a preset period 610; enabling a wireless communication link between toothbrush and device 620; and exchanging data between

toothbrush and device as part of the wireless communication 630; the latter two partially taking place as part of the environment 700 of the mobile computing device.

A method of operating an oral care system is also disclosed in the present disclosure. In one embodiment, such a method includes the steps of a) providing an electric toothbrush 110 and a mobile computing device 200 that stores a computer application 210; b) activating a ready mode in response to a signal indicating a relevant change of an external condition; and c) triggering the system to perform at least one of the following: switching on one or more of the electric loads for a preset period; enabling or establishing a wireless communication between the electric toothbrush and the mobile computing device; or exchanging data between toothbrush and device as part of the wireless communication.

The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as “40 mm” is intended to mean “about 40 mm”.

Every document cited herein, including any cross referenced or related patent or application, is hereby incorporated herein by reference in its entirety unless expressly excluded or otherwise limited. The citation of any document is not an admission that it is prior art with respect to any invention disclosed or claimed herein or that it alone, or in any combination with any other reference or references, teaches, suggests or discloses any such invention. Further, to the extent that any meaning or definition of a term in this document conflicts with any meaning or definition of the same term in a document incorporated by reference, the meaning or definition assigned to that term in this document shall govern.

While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

CLAIMS

What is claimed is:

1. An oral care system, comprising:
 - an electric toothbrush having an energy source; an electronic circuit, in particular including a microcontroller, and one or more electric loads; and at least a first sensor for providing a first signal indicating a relevant change of a first external condition; and
 - a mobile computing device that stores a computer application;
 - wherein in response to a relevant change in an external condition, the electronic circuit is arranged to activate a ready mode, the ready mode causing the system to enable or establish a wireless communication link between toothbrush and the mobile computing device, in particular wherein the communication is bi-directional.
2. The oral care system in accordance with claim 1, wherein the relevant change in the external condition is at least one of a change in the ambient light condition, a change in the environment of the electric toothbrush, a change in the position or motion status of the electric toothbrush, a change of ambient temperature, a change of the ambient sound level, a change in a charging status.
3. The oral care system in accordance with claim 1 or claim 2, wherein the electric toothbrush comprises a second sensor for providing a second signal indicating a relevant change of a second external condition, which second sensor is different to the first sensor.
4. The oral care system in accordance with anyone of claims 1 to 3, wherein the first sensor is one of a light sensor, a microphone, an magnetic field sensor such as a Hall sensors, a capacitance sensor, a resistance sensor, a voltage sensor, a current sensor, an inductive sensor, a humidity sensor, a movement or acceleration or inclination sensor such as a gyroscope, a pressure sensor, a gas sensor, a vibration sensor, and a temperature sensor.
5. The oral care system in accordance with anyone of claims 1 to 4, wherein in response to a relevant change in an external condition, the electronic circuit is arranged to start

exchanging data between toothbrush and device as part of the wireless communication.

6. The oral care system in accordance with anyone of claims 1 to 5, wherein in response to a relevant change in an external condition, the electronic circuit is arranged to switch on one or more of the electric loads for a preset period.
7. The oral care system in accordance with anyone of claims 1 to 6, wherein one of the one or more electric loads is a light emission element such as an LED, a display, or an audio and/or video signal reproducing element.
8. The oral care system in accordance with anyone of claims 1 to 7, wherein in response to a relevant change in an external condition, the electronic circuit is arranged to trigger the launch the application to the foreground of the mobile computing device.
9. The oral care system in accordance with anyone of claims 1 to 8, wherein the electronic circuit is arranged to limit the ready mode to a predetermined time, in particular where the predetermined time period is in between 1 second and 240 seconds.
10. The oral care system in accordance with anyone of claims 1 to 9, wherein the first signal comprises enough energy content to activate the electronic circuit.
11. The oral care system in accordance with anyone of claims 1 to 10, wherein the relevant change is determined by a sensor value crossing a predetermined threshold value.
12. The oral care system in accordance with anyone of claims 1 to 11, wherein the first sensor is a internal clock that provides the first signal at a predetermined time.
13. A method of operating an oral care system, the method comprising the steps of:
providing an electric toothbrush and a mobile computing device that stores a computer application;

activating a ready mode in response to a signal indicating a relevant change of an external condition; and

triggering the system to perform at least the following: enabling or establishing a wireless communication between the electric toothbrush and the mobile computing device.

14. The method of the previous claim, wherein the step of triggering includes triggering the system to switching on one or more of the electric loads for a preset period.
15. The method of the two previous claims, wherein the step of triggering includes triggering the system to exchanging data between toothbrush and device as part of the wireless communication.

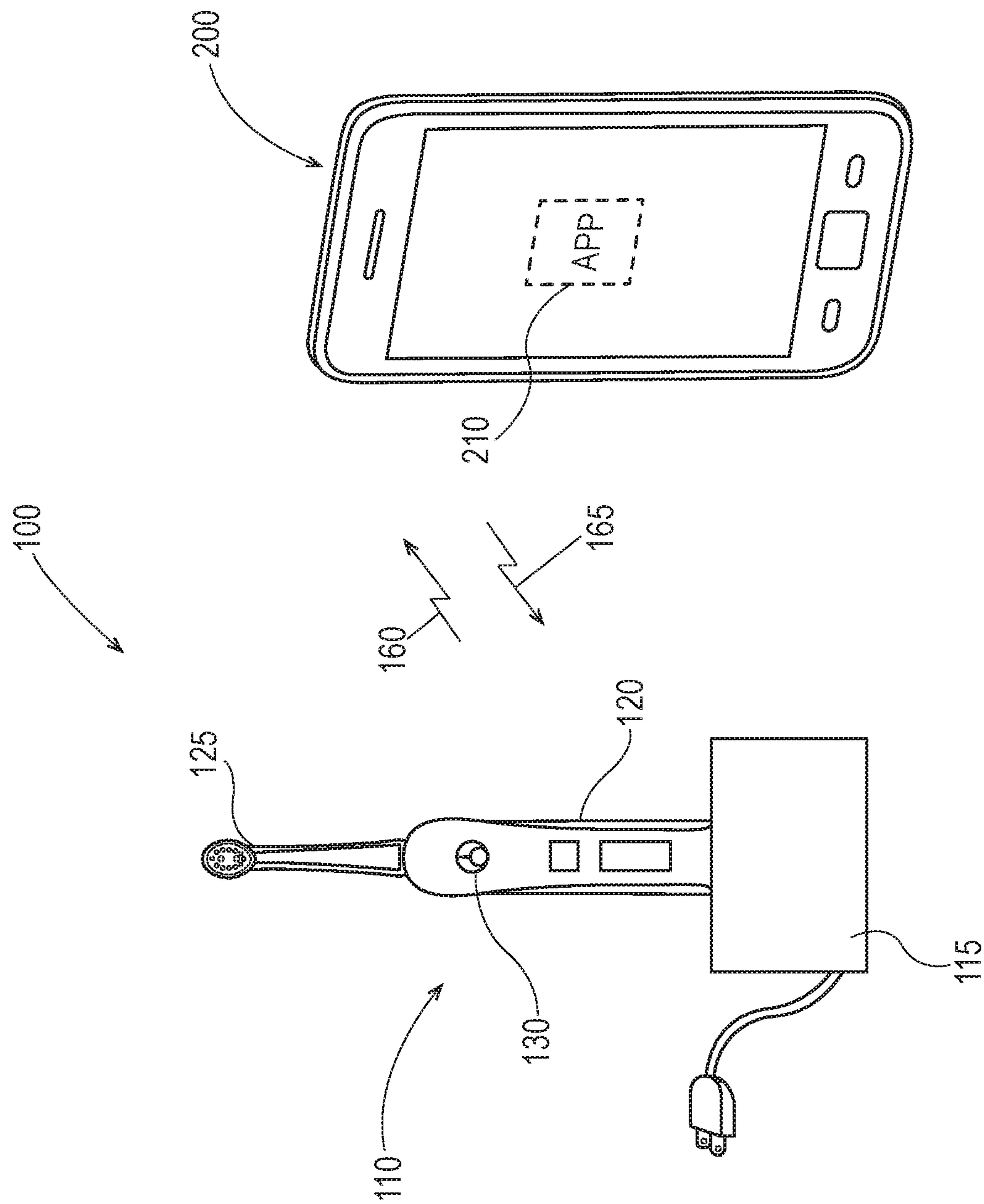


Fig. 1

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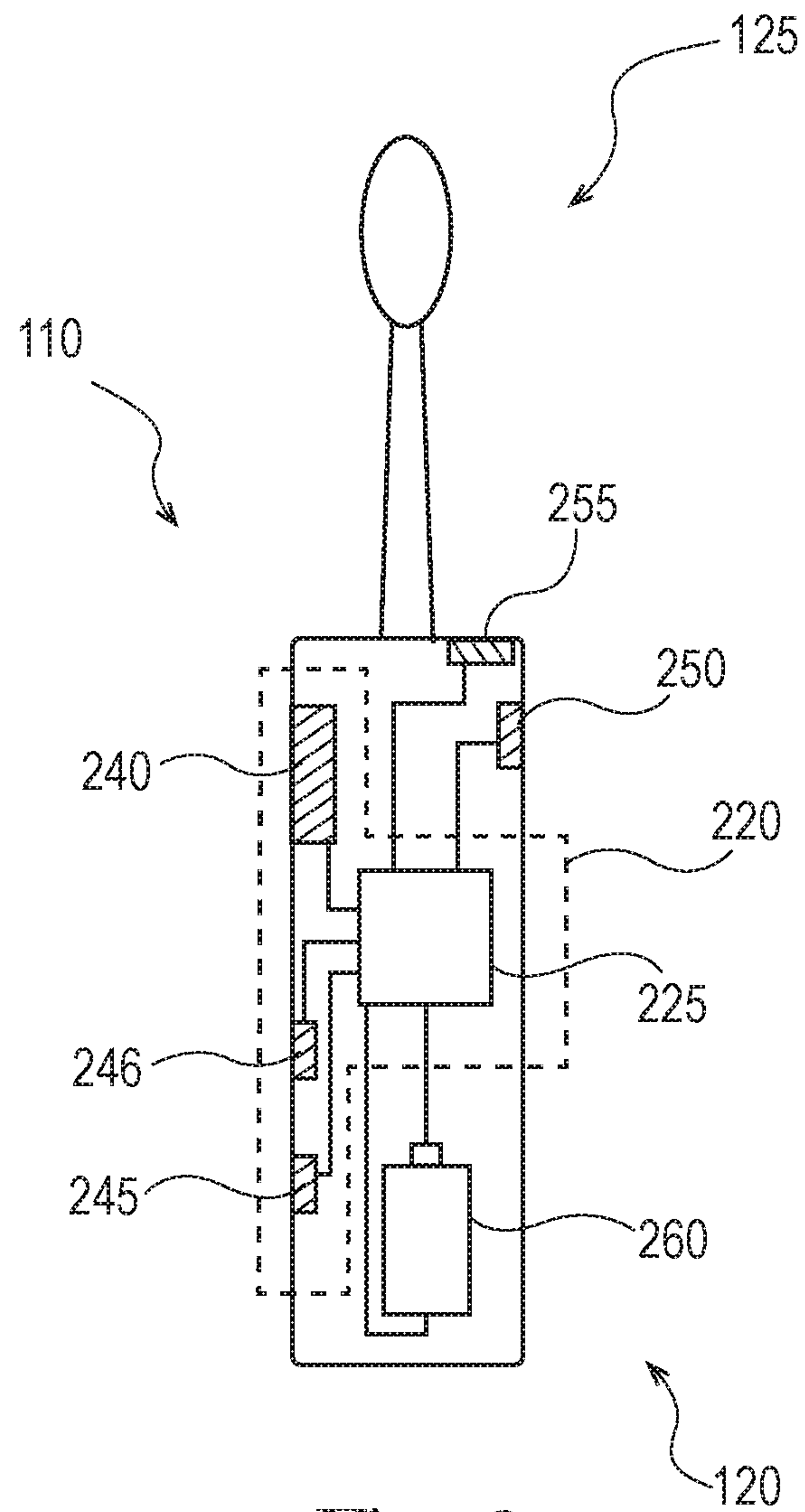


Fig. 2

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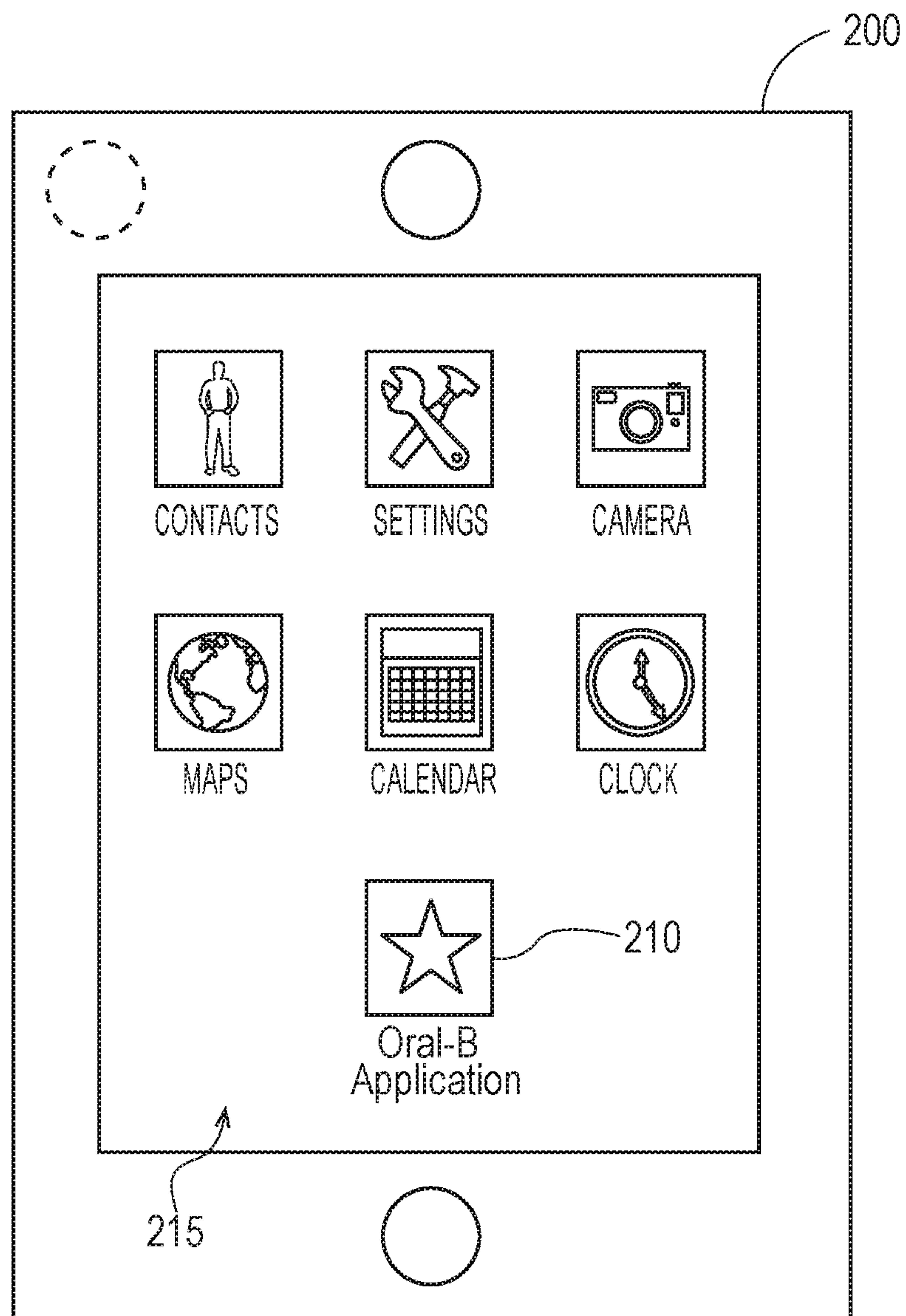


Fig. 3

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Fig. 4

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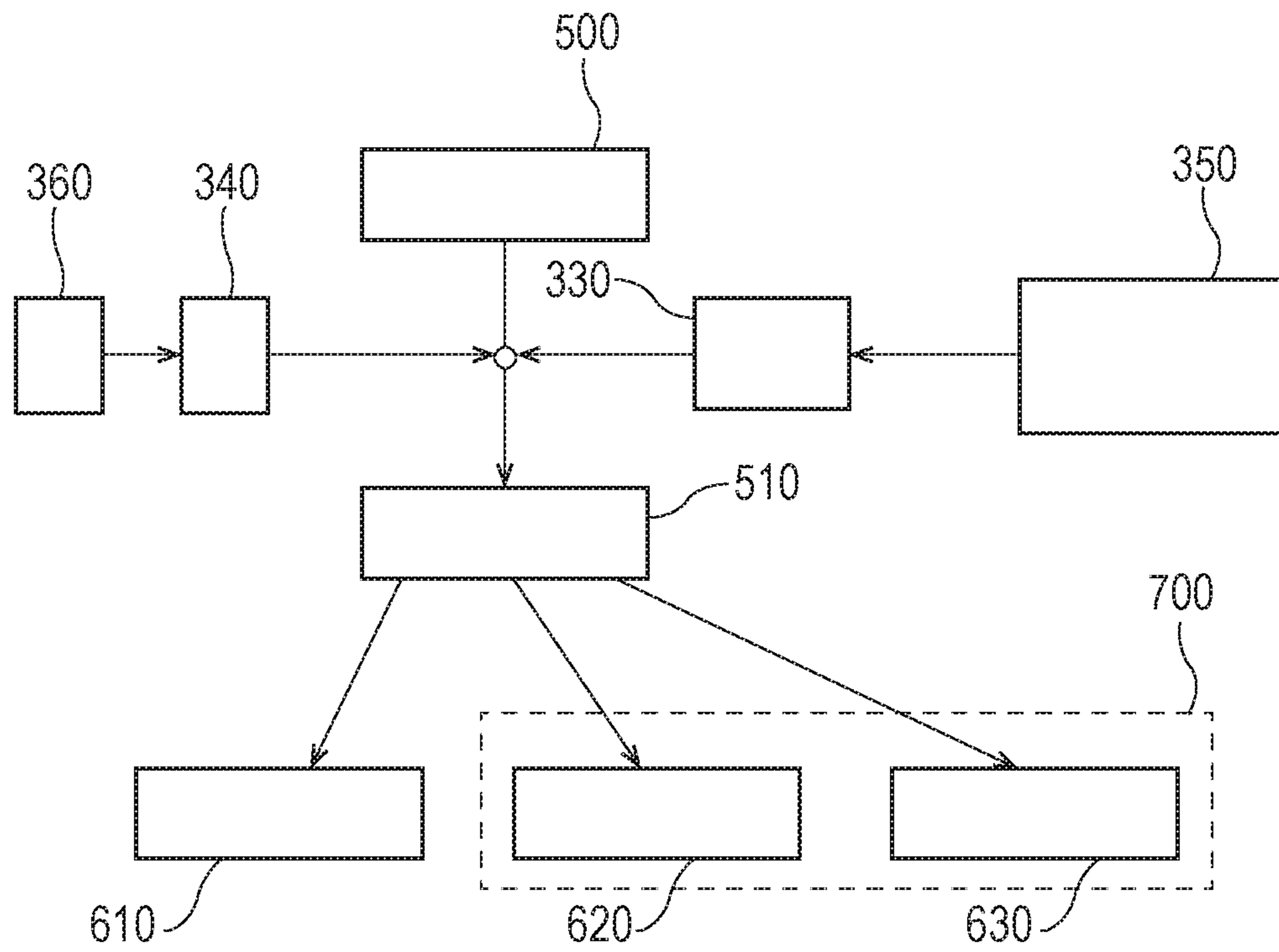


Fig. 5

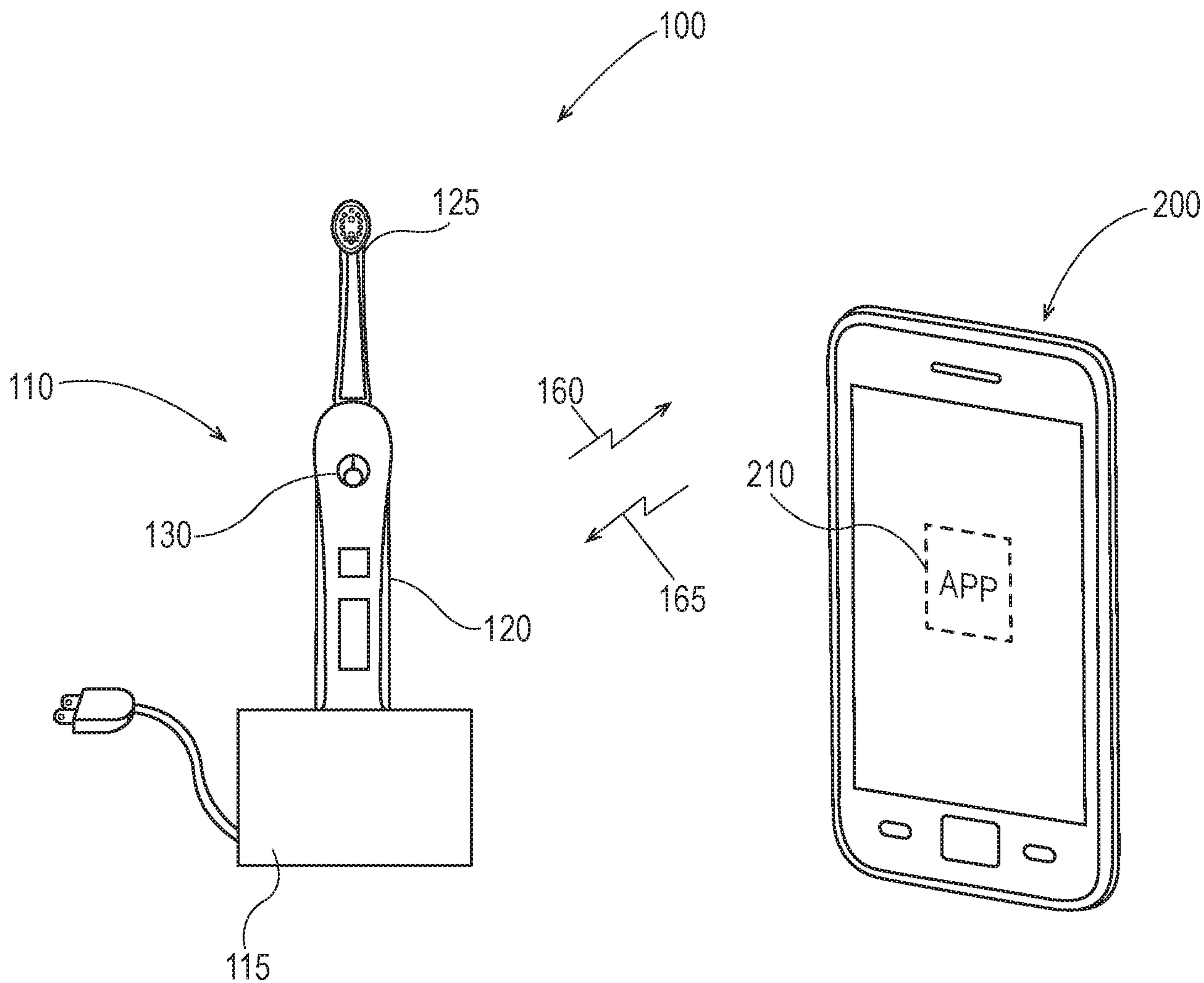


Fig. 1