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(54) Title: PERSONAL CARE IMPLEMENTS HAVING A DISPLAY

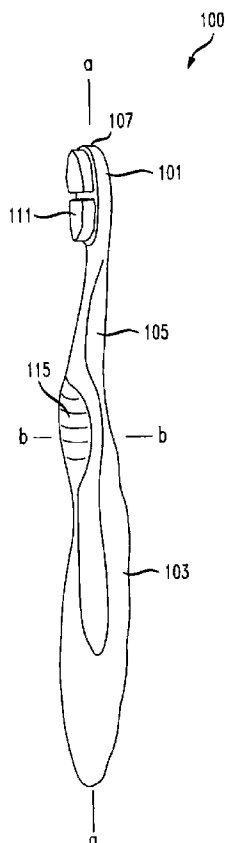


FIGURE 1A

(57) Abstract: A personal care implement or toothbrush includes a display for providing content to a user. The display may be configured to present content in a mirror- image format. The personal care implement may be configured to operate in one or more modes of operation. In a clock mode, the display displays a clock reading and/ or calendar reading. In a timer mode, the display displays a countdown or count up timer. In a counter mode, the display displays a number of strokes to be counted up to or down from. One or more components may be included for setting variables associated with the modes of operation, for changing an orientation of the displayed content between a mirror-image format and forward-facing format, and for changing the particular mode of operation.

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TITLE OF THE INVENTION

PERSONAL CARE IMPLEMENT HAVING A DISPLAY

BACKGROUND OF THE INVENTION

[01] The present invention pertains to a personal care implement, in particular, to a toothbrush with a display screen. Tooth brushing is part of a daily oral hygiene activity. Dentists generally recommend that an individual brush his or her teeth for a minimum interval per cleaning, such as two minutes. Despite such recommendations, many individuals, especially young children, do not regularly brush their teeth for the recommended minimum interval. Such habits often can be attributed to the individual regarding tooth brushing as a mundane duty with few pleasurable aspects.

BRIEF SUMMARY OF THE INVENTION

[02] The invention pertains to a personal care implement including a display to provide information to a user of the implement.

[03] In one aspect of the invention, a personal care implement has a head and a body, the body including a display configured to present content in a mirror-image format for viewing by a user.

[04] In one aspect of the invention, the content includes alpha characters, numeric characters or alphanumeric characters. In another aspect, the content pertains to a period of time. In still another aspect, the content pertains to a stroke count of the toothbrush.

[05] In another aspect, the personal care implement may include at least one actuator configured to change a mode of operation of the oral care implement. The modes of operation may change, for example, between a clock mode, a timer mode, or a stroke counter mode.

[06] In yet another aspect, the implement may include at least one actuator configured to change an orientation of the content on the display of the oral care implement.

[07] In another aspect, upon engagement of the at least one actuator, the orientation of the content on the display is reversed so it can be read by a user from a left to right direction.

[08] In another aspect, the display may include a backlight that operates during one or more predefined time periods.

[09] According to another aspect, the implement includes a light detection sensor that is configured to operate the backlight when detected ambient light is below a threshold level.

[10] In another aspect, the implement includes a sensor configured to rotate the content being presented upon detection of a rotation of the oral care implement about an axis.

[11] In another aspect, the implement includes a personal care region; a handle for gripping the implement and having neck adjacent to the personal care region; and a clock device disposed in neck of the handle.

[12] Other features and advantages of the invention will become apparent from the following description taken in conjunction with the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[13] Figures 1A-1B are perspective front and rear views of an oral care implement, such as a toothbrush, according to one or more embodiments of the invention;

[14] Figures 2A-6B are enlarged views of the implement portions with a display; and

[15] Figure 7 is an example functional block diagram of components of the implement with an electronic display system according to one or more embodiments of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[16] In the following description, the invention is discussed in terms of a toothbrush (e.g. a form of an oral care implement) but could be in the form of other personal care implements, such as a hair dryer. The personal care implement is normally used by a human for personal hygiene. For example, a toothbrush can be used for personal hygiene, such as oral care purposes. Further, it is understood that other embodiments may be utilized and structural and functional modifications may be made without departing from the scope of the present invention.

[17] Figures 1A-1B illustrate an oral care implement, such as a toothbrush, generally designated with the reference numeral 100. The toothbrush 100 generally includes a head 102 and a handle 103.

[18] The handle 103 is generally an elongated member dimensioned so that a user can readily grip and manipulate the toothbrush 100. The handle 103 may be formed of many different shapes, lengths and with a variety of constructions. In one construction, the handle 103 has a neck portion 105 positioned adjacent the head 101. The neck portion 105 may be a narrowed region on the handle 103 between head 101 and the part of the handle normally gripped by the user. Nevertheless, the neck portion 101 could be the region between the head 101 and the part of the handle normally gripped by the user. In another construction, the handle 103 is integrally formed with the head 101. Other attachment configurations also are possible.

[19] The head 101 may include an oral care region comprising one or more tooth cleaning elements 111. As used herein, the term "tooth cleaning elements" or "cleaning elements" includes any type of structure that is commonly used or is suitable for use in providing oral health benefits (e.g., tooth cleaning, tooth polishing, tooth whitening, massaging, stimulating, etc.) by making contact with portions of the teeth and gums. Such tooth cleaning elements include but are not limited to tufts of bristles that can be formed to have a number of different shapes and sizes and elastomeric cleaning members that can be formed to have a number of different shapes and sizes, or a combination of both tufts of bristles and elastomeric cleaning members.

[20] In one construction, the one or more tooth cleaning elements 111 are formed from a plurality of bristles. Referring to Figures 1A-1B, the tooth cleaning elements 111 are bristle regions having different shapes, however, it is understood that a number of different configurations of oral care implements may be utilized. The one or more tooth cleaning elements 111 may be attached to the head 101 by known methods, such as being fit within recesses formed in the head 101 along a front portion 107 of the toothbrush 100 (Figure 1A). The head 101 also may be configured to be detached from the neck 105 or handle 103 and replaced with a new head 101 when the previous head 101 wears out and should be replaced.

[21] In another construction, toothbrush 100 may be a powered toothbrush including a power source that drives a powered element, such as movable cleaning elements 111 with an activation/deactivation or "on/off" button (not shown).

[22] Figure 1A illustrates a front portion 107 of the toothbrush 100 and Figure 1B shows a rear portion 109 of the toothbrush 100. In the illustrative Figures 1A-1B, a thumb gripping portion 115 is also shown. A user may hold the toothbrush 100 with their thumb resting on gripping portion 115. Thumb gripping portion 115 may be formed of a pliable, cushioning material that is depressible as a user presses their thumb against it. In one or more constructions, as described herein, the thumb gripping portion 115 may serve as an actuator. For example, portion 115 may act as a button to turn an electronic device associated with the toothbrush 100 "on" and/or "off," a button to change a mode of operation of an electronic device associated with the toothbrush 100, and/or a button to change an orientation of the content of a display associated with the toothbrush 100.

[23] Referring to Figure 1B, display 121 presents symbolic or graphical content for viewing by a user. The symbolic or graphical content may include characters or images associated with digital data. In one construction, the content may include video clips or other moving images and characters for dynamic viewing by a user. Display 121 is disposed within the neck portion 105 on the back portion 109 of the toothbrush 100. In this arrangement, the oral care region is oriented in a first direction (e.g., extending away from the front portion 107) and the display is oriented in a second direction opposed to the first direction. Display 121 may be a liquid crystal display (LCD) or a light emitting diode (LED) type display among other types. For example, display may be an Organic LED that can be tuned to provide a desired luminescent characteristic such as color, temperature, intensity etc. OLED technology can be embedded into the toothbrush molding, or can be applied to the surface of the toothbrush body. It should be understood by those skilled in the art that the present invention is not limited to any particular type of display.

[24] Figures 2A-6B illustrate alternative constructions of the oral care implement, generally designated with the reference numerals 200, 300, 400, 500, and/or 600,

respectively. For ease of explanation, similar structures will be referred to with similar reference numerals, using a 200, 300, 400, 500, or 600 series numerals.

[25] Figures 2A-2B illustrate a display region of a toothbrush according to one or more embodiments. As shown in Figure 2A, a toothbrush 200 includes a display 221 disposed within the neck portion 205. Although shown in the neck portion 205, it should be understood that other areas of the toothbrush 200 may be utilized to house the display 221. For example, the display could be located in the handle region on the side opposite the tooth cleaning elements 111. As shown in Figure 2A, the content of the display 221 refers to a time of day for clock reading, i.e., 7:07 AM. Display 221 may also present other content such as the current day, month, year, or century; future appointments or meeting reminders. In this arrangement, the display 221 functions as clock device or time piece.

[26] As shown in Figure 2A, toothbrush 200 may include two setting actuators 227. In this example, setting actuators 227 may be configured to allow a user to depress, or otherwise engage, one or more of the actuators 227 to set an hour and a minute for the time of day. A single actuator 227 and/or more than two actuators 227 may be utilized for toothbrush 200. For example, a third setting actuator 227 may be included to set the time with a designation of AM or PM.

[27] One or more additional actuators may be included to perform a variety of functions. As shown in Figure 2A, two additional actuators 223 and 225 are shown. In this example, actuators 223 and 225 may be push buttons. In other examples, actuators 223, 225, and 227 may be other types of input actuators. For example, they may be a switch or other type of input mechanisms or devices. In this example, actuator 223 may be a mode selection actuator. Actuator 223 allows a user to change the mode of operation of the display 221 to any of a number of different operations. For example, and as described with respect to Figure 2A and 2B, depression or other engagement of actuator 223 may change the mode of operation to present a time of day or clock reading on the display 221. A subsequent engagement of actuator 223, may change the mode of operation to a stroke counter, as illustrated in the example shown in Figures 3A and 3B. A further subsequent engagement of actuator 223 may change the mode of operation to a countdown or count-up timer, as illustrated in the

example shown in Figures 4A and 4B. Nevertheless, the specific order of the engagement events of the actuator 223, does not limit the scope of the invention.

[28] In one construction, the presented content changes corresponding to the change in time when operating in a mode to display a time of day for clock reading on the display 221. In addition, the designation of AM may change to PM when the 12th hour of the day has been reached. Similarly, the PM designation may change to AM when midnight is reached. Although described herein as a clock reading, the display 221 in this mode of operation may present the current date or future date in lieu of, or in combination with the presented time.

[29] Returning to the example in Figure 2A, actuator 225 may serve as an orientation actuator for the content presented in display 221. In one operation, when display 221 is in a forward facing direction for viewing by the user, the content shown on the display 221 in Figure 2A may be easily read in a left to right direction by the user (e.g., a forward-facing format). However, when the display 221 is in a rear-facing direction away from the user, the content is blocked from the view of the user. Furthermore, in the rear facing arrangement of display 221, when the content is viewed as an image on a reflective surface, the image of the display 221 is reversed with respect to the forward facing direction.

[30] In a construction of toothbrush 200, upon depression or other engagement of the orientation actuator 225, the content presented on the display 221 is changed to a mirror-image of the original content. Accordingly, the original content shown in the display 221 in Figure 2A is re-oriented or re-formatted to the content shown in Figure 2B, where the content is now in a right to left direction. For example, in Figure 2B, the time of 7:07 AM is still shown, but is now in a mirror-image format. The original content which would normally be read in a left to right direction in the English language is now presented in a right to left direction. In this example, when the content is reversed in the display 221 as seen in Figure 2B (e.g., in a mirror-image format), the display can be clearly read as 7:07 AM when viewed as a reflected image from a mirrored surface. This configuration is helpful to a user when the display 221 is in a rear-facing direction, such as when the user is brushing in front of a mirror (e.g. a front facing toward a mirror). In this manner, the user can readily determine

the information presented on the display by viewing the reflective image in the mirror without having to momentarily stop brushing. Nevertheless, upon depression/engagement of orientation actuator 225, the content in mirror-image format may change to that shown in Figure 2A for forward face viewing by the user. While the discussion refers to the English language reading direction, the inventive aspects may be practiced in other languages as well, such as Spanish, French, Chinese, Arabic, Russian, French, etc.

[31] Figures 3A-3B illustrate another construction of a toothbrush 300 in which the content relates to a stroke counter. In Figure 3A, toothbrush 300 includes a display 321 disposed in the body or a neck portion 305 of the toothbrush 300. The stroke counter mode of operation may be obtained by depression of one of the actuators. In this example, upon engagement of actuator 323, a user may switch from the time of day operation mode to the stroke counter operation. In the stroke counter mode, the number of brush strokes is tracked and counted by the toothbrush 300. By using actuators 327, a user may set a target number of strokes to be counted before an alarm (e.g., a sound or visible notification) is activated and/or the user may set a number of strokes to be counted down before an alarm is deactivated. Different stroke counts may be implemented at one time. For example, a user may track the total number of brush strokes, while also independently tracking the number of strokes in a particular area of his or her mouth. The information may be stored separately to allow a user to monitor his or her brushing habits.

[32] Similar to the mirror-image format of content in Figure 2B, Figure 3B illustrates a mirror-image format of the stroke count. Upon depression or other engagement of actuator 325 in Figure 3A, the content of display 321 may be reversed to show the stroke count, i.e., "17 strokes". A user can readily read at any time how many strokes have been counted or how many strokes remain to be counted via the reflection of the display 321 in a mirrored surface. Any number of different configurations of stroke counting or countdown may be implemented in accordance with aspects of the illustrative embodiments.

[33] Figures 4A-4B illustrate another construction of a toothbrush 400 in which the content is a count up or countdown timer. In Figure 4A, toothbrush 400 includes a

display 421 disposed in body or a neck portion 405 of the toothbrush 400. The timer mode of operation may be obtained by depression of one of the actuators. In this example, upon depression of actuator 423, a user may switch from the stroke counter mode of operation to the timer mode of operation. In the timer mode of operation, the toothbrush 400 may act as a device to count up to a certain time or to count down from a certain time. This may be useful to individuals who strive to brush their teeth for the recommended total of at least two minutes, twice a day. In one example, an alarm may be configured to alert the user upon the timer reaching the specified end time.

[34] Similar to the mirror-image format of the content in Figures 2B and 3B, Figure 4B illustrates a mirror-image format of the elapsed or remaining brushing time. Upon depression of actuator 425 in Figure 4A, the content to display 421 may be reversed to show 1:47 in mirror-image format. A user can readily determine how much time remains, whether counting down to zero or counting up to a particular end time, by viewing the display 421 as a reflection in a mirror. Any number of different configurations of counting up or counting down may be implemented in accordance with aspects of the illustrative embodiments.

[35] Figure 5 illustrates another construction of a toothbrush 500. In Figure 5, toothbrush 500 includes a display 521 disposed in body or a neck portion 505 of the toothbrush 500. In this example, display 521 includes a backlight feature. For example, OLED technology could be used in display 521 of toothbrush 500. With this feature, the toothbrush 500 may act as a nightlight during certain configurable times of day. As shown in Figure 5, the backlight of display 521 is illuminated at 2:07 AM. A user may use the illuminated light from the backlight of the display 521 to see around a darkened room for orientation and may be able to tell the time at the same time. This feature may be implemented by depression or other engagement of one of the actuators.

[36] In this example, a user may set the time period in which he/she desires the backlight to be in operation. For example, utilizing actuators 527, a user may set the backlight to operate between one or more predefined time periods, such as 11:00 PM to 6:00 AM, although it should be understood that any of a number of other settings

may be configured. In an alternative embodiment, a light detection sensor may be included within the toothbrush 500 to detect the ambient light around the toothbrush 500. In one example, the sensor may be a photodiode or photoconductive sensor enabled read a light level of 0 to 100 Foot-Candles (FC). Upon falling below a particular lighting threshold, the toothbrush 500 may then automatically initiate operation of the backlight on the display 521. The body of the toothbrush 500 may have a small window (e.g., clear plastic) which receives ambient light for the sensor. For example, the window may be part of display 521 and the sensor may be provided in combination with the display 521.

[37] Figures 6A-6B illustrate another construction of a toothbrush 600. As shown in Figure 6A, toothbrush 600 includes a display 621 disposed in a body or in a neck portion 605 of the toothbrush 600. In this example, the user may operate the toothbrush 600 in a time of day or clock reading mode of operation. Such may be the case where a user has depressed one or more of actuators 623, 625, and/or 627. As shown, the content of the display 621 is in a mirror-image format so the user may readily read the content as a reflection in a mirror. Referring to Figures 1A and 6A, the content is shown in which the graphic characters are presented along a longitudinal axis (a-a shown in FIG. 1A) of the display 621 and of the toothbrush 600. The toothbrush may be rotated clockwise or counter-clockwise about an axis b-b transverse to the longitudinal axis a-a of the toothbrush as shown in FIG. 1A. If the user rotates the toothbrush counter-clockwise 180° about axis b-b, the content of display 621 would be displayed upside down.

[38] Referring to Figure 6B, when toothbrush 600 is rotated 180° counter-clockwise, the content of display 621 also flips or rotates to maintain the mirror-image format. Therefore, when looking at the reflection of the display 621 in a mirror, a user may properly see the time or other information. Any of a number of different mechanisms may be utilized to track the position of the display and/or toothbrush. For example, a sensor, such as a gyroscopic sensor or an accelerometer, built into the toothbrush 600 may detect the relative change in position of the toothbrush 600 from a first state, to a second state, in which the toothbrush 600 has been rotated 180°. As should be understood, although described with respect to the

time of day mode of operation, the description with respect to Figures 6A and 6B may be implemented with respect to other modes of operation of the toothbrush.

[39] Referring to FIG. 6B, in an alternative construction, an accelerometer utilizing Micro-Electronic Mechanical System (MEMS) technology could be embedded in the toothbrush during molding, or could take the form of a sticker applied on the toothbrush body. A MEMS accelerometer device generates a signal representative of acceleration in a particular direction ("measurement direction"). The MEMS accelerometer detects gravitational force when not in motion. Accordingly, different altitudes of the MEMS accelerometer device with respect to the vertical can result in different readings which depend on the coincidence of the measurement direction with the direction of the gravitation pull. The detection of different altitudes may be used to detect the position of the toothbrush and the relative change in position from a first state or second state as discussed above.

[40] As described herein with respect to Figure 7, a control system 707 of the toothbrush 100 may be included to provide content or image data for the display 121. Figure 7 illustrates a block diagram of components in one or more constructions of toothbrush 100. One or more of the components shown in Figure 7 may be included within one or more printed circuit boards. Toothbrush 700 includes control system 707, a power supply operatively connected to one or more elements of the system 707; and a display 711 operatively connected to one or more components of the system 707. Power supply 709 may include one or more power components, such as a battery or a wired connection to a power source, providing for electrical power to electrical components of the toothbrush 700.

[41] Clock circuitry 701 may include hardware, software, computer-readable instructions, or other components to allow for tracking of the time of day and/or time of year and for outputting such information in a suitable form for use by the display 711. As such, clock circuitry 701 may include a crystal oscillator for counting seconds. Clock circuitry 701 may be configured to perform the functions for processing signal(s) performing computer-readable instructions, and reading from and writing to a memory (not shown) associated with the toothbrush 700 operating in a clock mode.

[42] Timer circuitry 703 may include hardware, software, computer-readable instructions, or other components to allow for counting up or counting down time and for outputting such information in suitable form for use by the display 711. Timer circuitry 703 may include a crystal oscillator for counting seconds, minutes, etc. Timer circuitry 703 may be configured to perform the functions for processing signal(s) performing computer-readable instructions, and reading from and writing to a memory (not shown) associated with the toothbrush 700 operating in a timer mode.

[43] Counter circuitry 705 may include any hardware, software, computer-readable instructions, or other components to allow for counting up or counting down strokes of the toothbrush 700 and for outputting such information in suitable form for use by the display 711. As such, counter circuitry 705 may include a sensor for detecting movement of the toothbrush. Counter circuitry 705 may be configured to perform the functions for processing signal(s), performing computer-readable instructions, and reading from and writing to a memory (not shown) associated with the toothbrush 700 operating in a stroke counter mode.

[44] Orientation circuitry 713 may include hardware, software, computer-readable instructions, or other components to allow the content of display 711 to be selectively presented in a mirror-image format or forward-facing format, and for outputting such information in suitable form for use by the display 711. For example, orientation circuitry 713 may receive and process an input signal to cause display 711 and/or clock circuitry component 701, timer circuitry component 703, and/or counter circuitry component 705 to display an image on display 711. Orientation circuitry 713 may be configured to perform the functions for processing signal(s) performing computer-readable instructions, and reading from and writing to a memory (not shown) associated with the toothbrush 700 switching between a reversed content display and a non-reversed content display.

[45] Mode selection circuitry 715 may include electrical circuitry, software, computer-readable instructions, or other components to allow for changing the mode of operation of the toothbrush 700. For example, mode selection circuitry 715 may receive and process an input signal to change the mode of operation from time

of day mode of operation to timer mode of operation. Mode selection circuitry 715 may be configured to perform the functions for processing signal(s) performing computer-readable instructions, and reading from and writing to a memory (not shown) associated with the toothbrush 700 switching between different modes of operation.

[46] Setting circuitry 717 may include electrical circuitry, software, computer-readable instructions, or other components to allow for setting one or more features of the toothbrush 700. For example, setting circuitry 717 may receive and process an input signal to set one or more features, such as the time of day, the month or year, the time to count up to, the time to count down from, the strokes to count up to, and/or the strokes to count down from. Setting circuitry component 717 is configured to perform the functions for processing signal(s) performing computer-readable instructions, and reading from and writing to a memory (not shown) associated with setting features of the toothbrush 700.

[47] The inventive aspects may be practiced for a manual toothbrush or a powered toothbrush. While the various features of the toothbrush 100 work together to achieve the advantages previously described, it is recognized that individual features and sub-combinations of these features can be used to obtain some of the aforementioned advantages without the necessity to adopt all of these features.

[48] It is understood that designations such as "first" and "second" are for illustrative purposes and can be interchanged. Further, a care region, such as a personal care region or oral care region, may engage a particular anatomical portion or region of an organism, such as a human body or mammal. The engagement may be physical abutment of the care region of the implement or movement a fluid, such as air or liquid, coming from the care region. In another example, the care region may have light coming from the region which contacts the user's anatomical portion. In one example, an oral care region may have cleaning elements or may direct a form of ultraviolet light to clean/whiten the teeth of a user. In a hair dyer example (e.g., a form of a personal care implement), a personal care region may include a comb or nozzle for directing forced air - heated or unheated onto a user's head, such as hair.

[49] While the invention has been described with respect to specific examples including presently preferred modes of carrying out the invention, those skilled in the art will appreciate that there are numerous variations and permutations of the above described systems and techniques. Thus, the spirit and scope of the invention should be construed broadly as set forth in the appended claims.

I claim:

1. A personal care implement, comprising:
a care region for engaging an anatomical region of an organism;
a body for gripping the implement; and
a display disposed in the body, the display being configured to present content in a mirror-image format.
2. The personal care implement of claim 1, wherein the care region is oriented in a first direction and the display is oriented in a second direction opposed to the first direction.
3. The personal care implement of claim 1, wherein the content is presented for reading in a right to left direction with respect to a longitudinal axis of the display.
4. The personal care implement of claim 1, wherein the content includes graphical characters.
5. The personal care implement of claim 1, wherein the body includes a neck and the display is disposed in the neck.
6. The personal care implement of claim 1, wherein the content includes alpha or numeric characters.
7. The personal care implement of claim 6, wherein, upon reflection in a mirrored surface or image reflective surface, the content is readable in a left to right direction.
8. The personal care implement of claim 1, further comprising an actuator configured to change a mode of operation for presenting the graphical content on the display.
9. The personal care implement of claim 8, wherein the actuator is configured to change the mode of operation to one of: a clock mode, a timer mode, and a counter mode.
10. The personal care implement of claim 9, wherein the actuator is a push button input device.
11. The personal care implement of claim 1, further comprising an actuator configured to change an orientation of the content on the display different from the mirror-image format.

12. The personal care implement of claim 11, wherein the orientation of the content on the display is reversed to read from left to right, responsive to the engagement of the actuator.
13. The personal care implement of claim 11, wherein the actuator is configured to change a mode of operation of the personal care implement.
14. The personal care implement of claim 13, wherein the actuator is configured to change the mode of operation to one of: a clock mode, a timer mode, and a counter mode.
15. The personal care implement of claim 14, further comprising a sensor configured to determine strokes of the personal care implement when operating in the counter mode.
16. The personal care implement of claim 14, further comprising an alarm associated with the mode of operation.
17. The personal care implement of claim 1, further comprising a sensor configured to change the orientation the content being presented, upon detection of a rotation of the body about an axis normal to a longitudinal axis of the body.
18. A personal care implement, comprising:
 - a care region for engaging an anatomical region of a user;
 - a body for gripping the implement;
 - a display disposed in the body and the display configured to present graphical content; and
 - a sensor configured to change orientation the content being presented, upon detection of a rotation of the body about an axis transverse to a longitudinal axis of the body.
19. The personal care implement of claim 18, further comprising an actuator configured to set a clock reading mode of the personal care implement.
20. The personal care implement of claim 18, further comprising an actuator configured to set a stroke count mode of the personal care implement.
21. The personal care implement of claim 18, further comprising an actuator configured to set a timer reading mode of the personal care implement.

22. The personal care implement of claim 18, further comprising a light detection sensor configured to operate a backlight of the display when detected ambient light is below a threshold level.
23. The personal care implement of claim 18, wherein the display is included within a neck portion of the body.
24. The personal care implement of claim 18, wherein the personal care region is oriented in a first direction and the display is oriented in a second direction opposite of the first direction.
25. A personal care implement, comprising:
a care region for engaging an anatomical region of a user;
a handle for gripping the implement and having a neck adjacent to the care region; and
a clock device disposed in the neck.

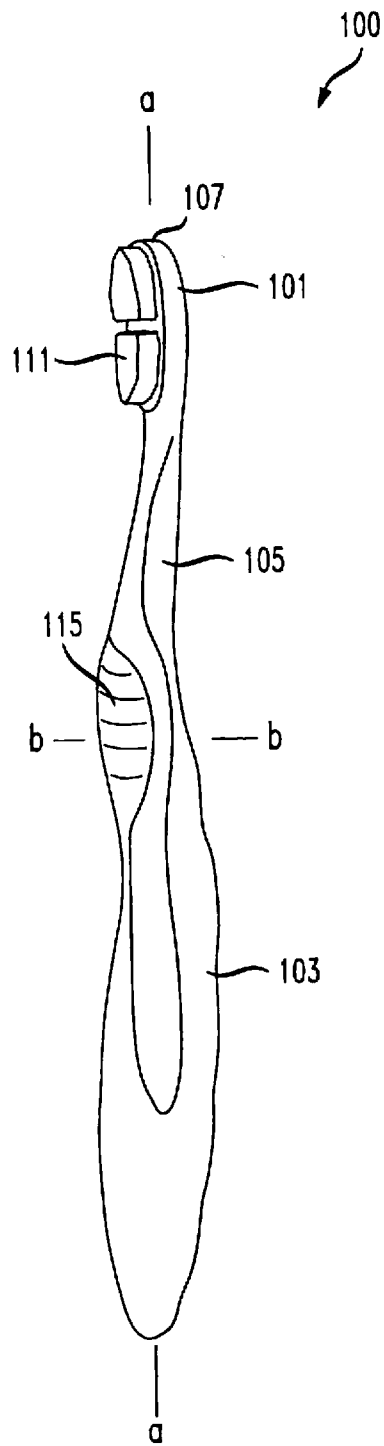


FIGURE 1A

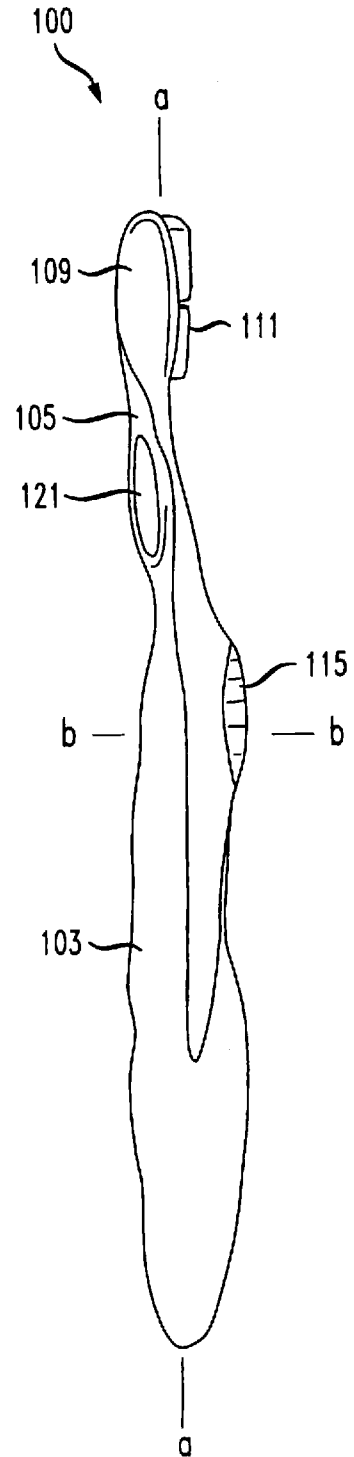


FIGURE 1B

FIGURE 2A

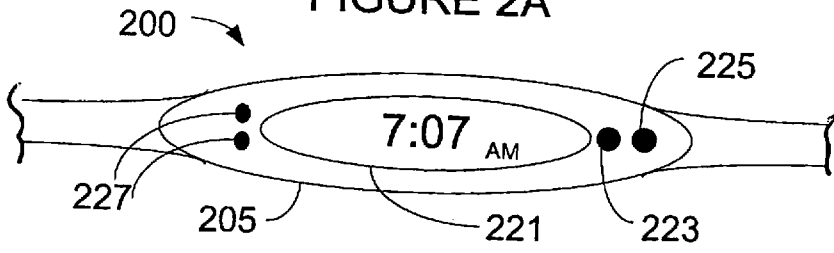


FIGURE 2B

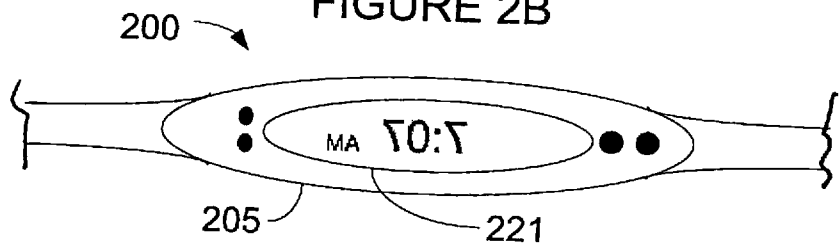


FIGURE 3A

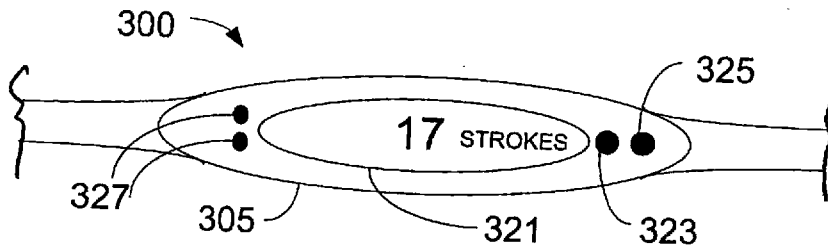


FIGURE 3B

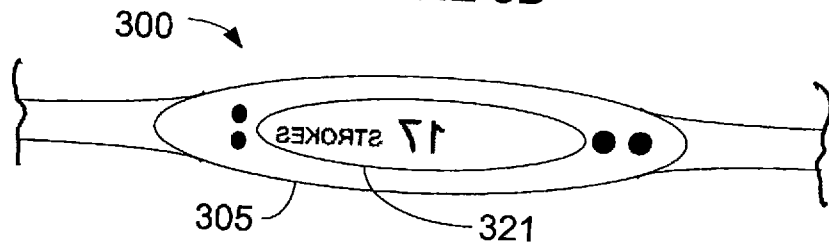


FIGURE 4A

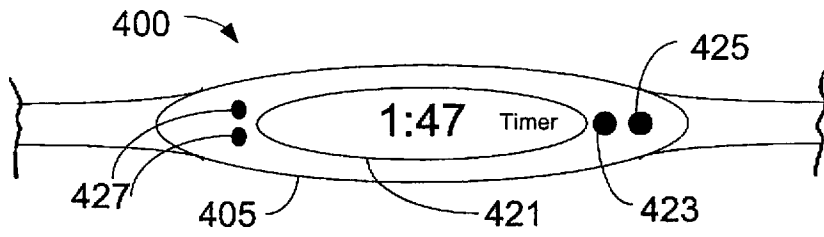


FIGURE 4B

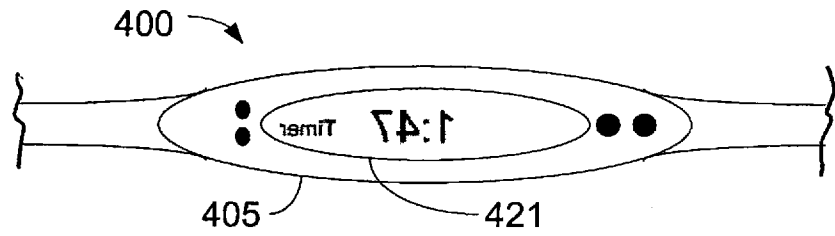


FIGURE 5

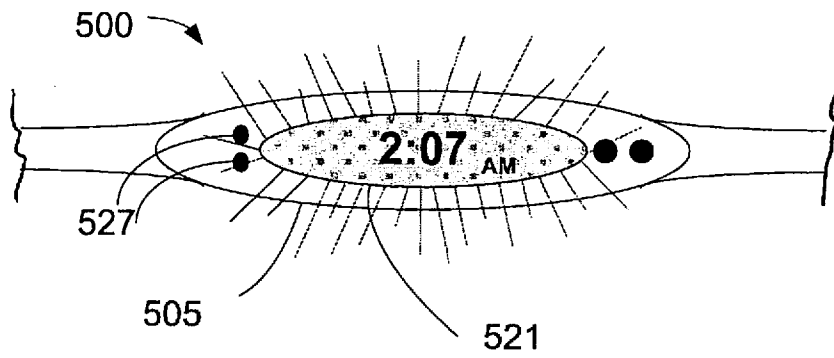


FIGURE 6A

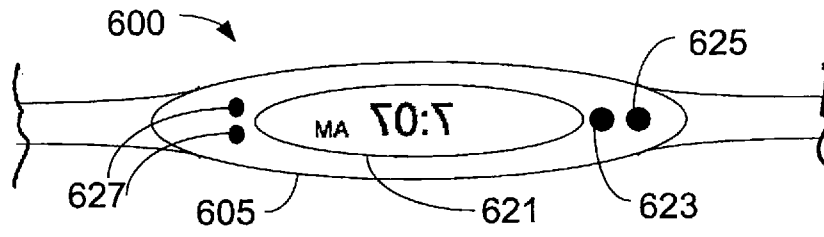
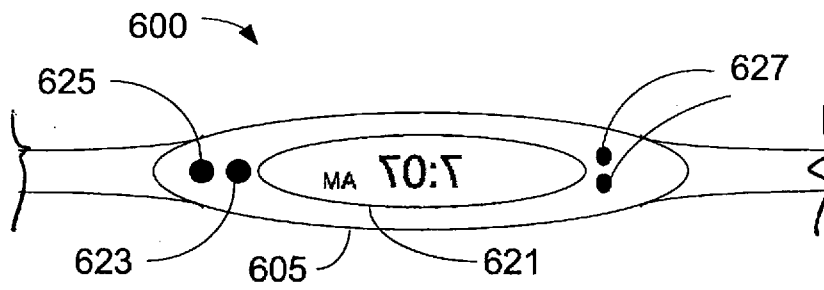


FIGURE 6B



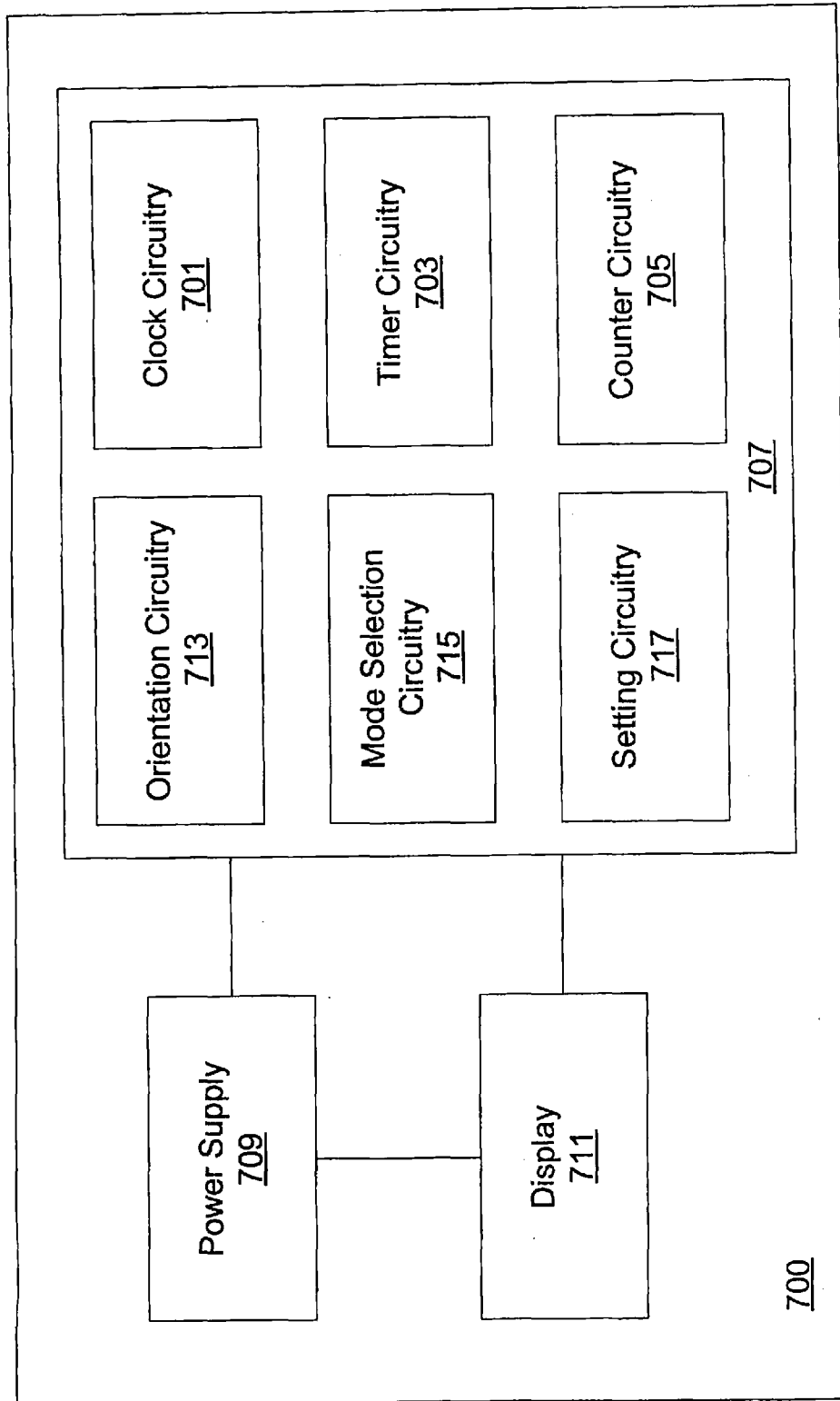


FIGURE 7

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/073534A. CLASSIFICATION OF SUBJECT MATTER
INV. A46B15/00

According to international Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A46B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/068984 A (PALMER, SHARON EILEEN [GB]) 21 June 2007 (2007-06-21) the whole document	1-25
X	DE 10 2005 044018 A1 (TRAPPE ANJA [DE]) 15 March 2007 (2007-03-15) the whole document	1-25
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X	US 5 673 451 A (MOORE JAMES R [US] ET AL) 7 October 1997 (1997-10-07) the whole document	1-25
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Date of the actual completion of the international search

3 November 2008

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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