



US 20160158599A1

(19) **United States**

(12) **Patent Application Publication**  
**Roslyakov**

(10) **Pub. No.: US 2016/0158599 A1**

(43) **Pub. Date: Jun. 9, 2016**

(54) **GOLF TRACKER**

**Publication Classification**

(71) Applicant: **Konstantin Roslyakov**, Woodinville,  
WA (US)

(51) **Int. Cl.**  
*A63B 24/00* (2006.01)

*A63B 71/06* (2006.01)

(72) Inventor: **Konstantin Roslyakov**, Woodinville,  
WA (US)

(52) **U.S. Cl.**  
CPC ..... *A63B 24/0021* (2013.01); *A63B 71/06*  
(2013.01); *A63B 2024/0025* (2013.01)

(21) Appl. No.: **14/960,278**

(22) Filed: **Dec. 4, 2015**

(57) **ABSTRACT**

**Related U.S. Application Data**

(60) Provisional application No. 62/088,477, filed on Dec.  
5, 2014, provisional application No. 62/088,352, filed  
on Dec. 5, 2014.

Described is, among other things, an identification tag capable of communicating with portable computing devices, which may, when used with associated software, may provide golfers real-time data collection, analysis, and visualization of data related to a game of golf or practice for a game of golf.

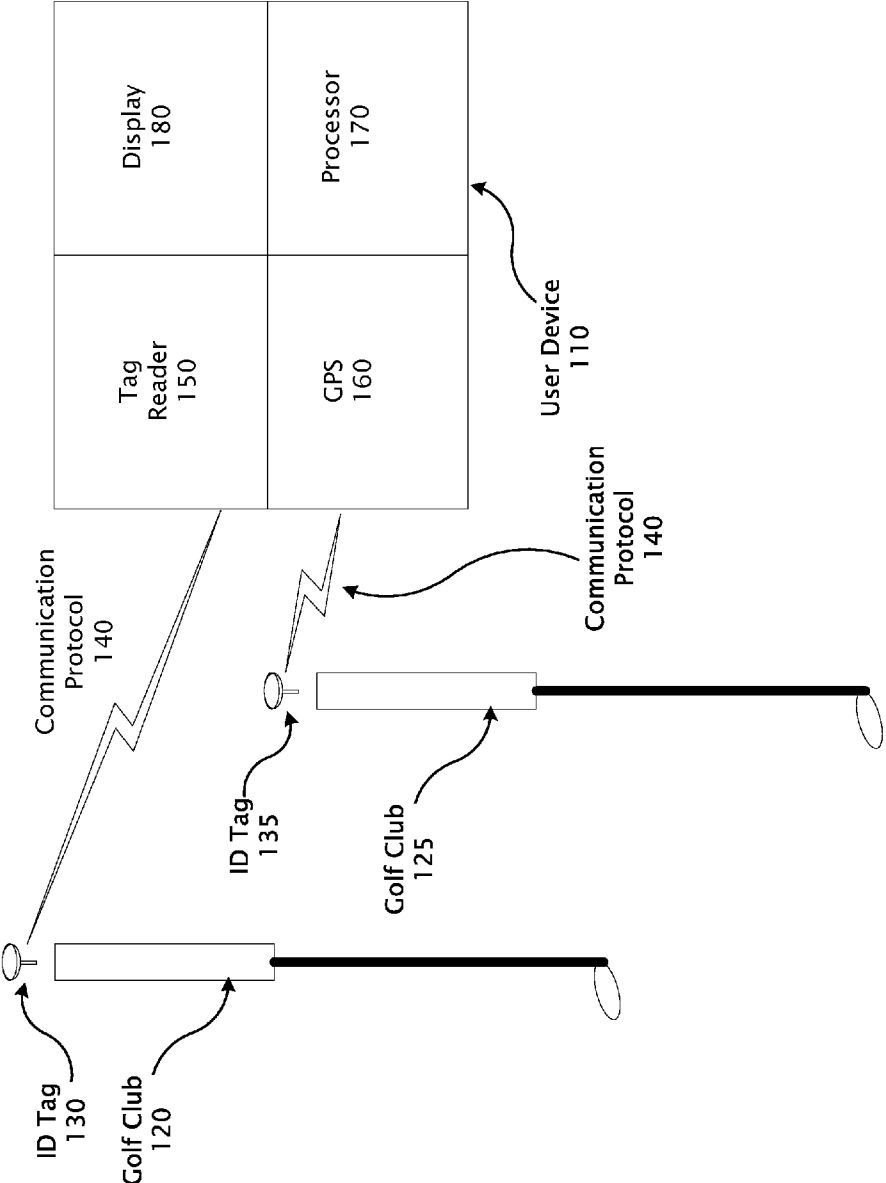


Figure 1

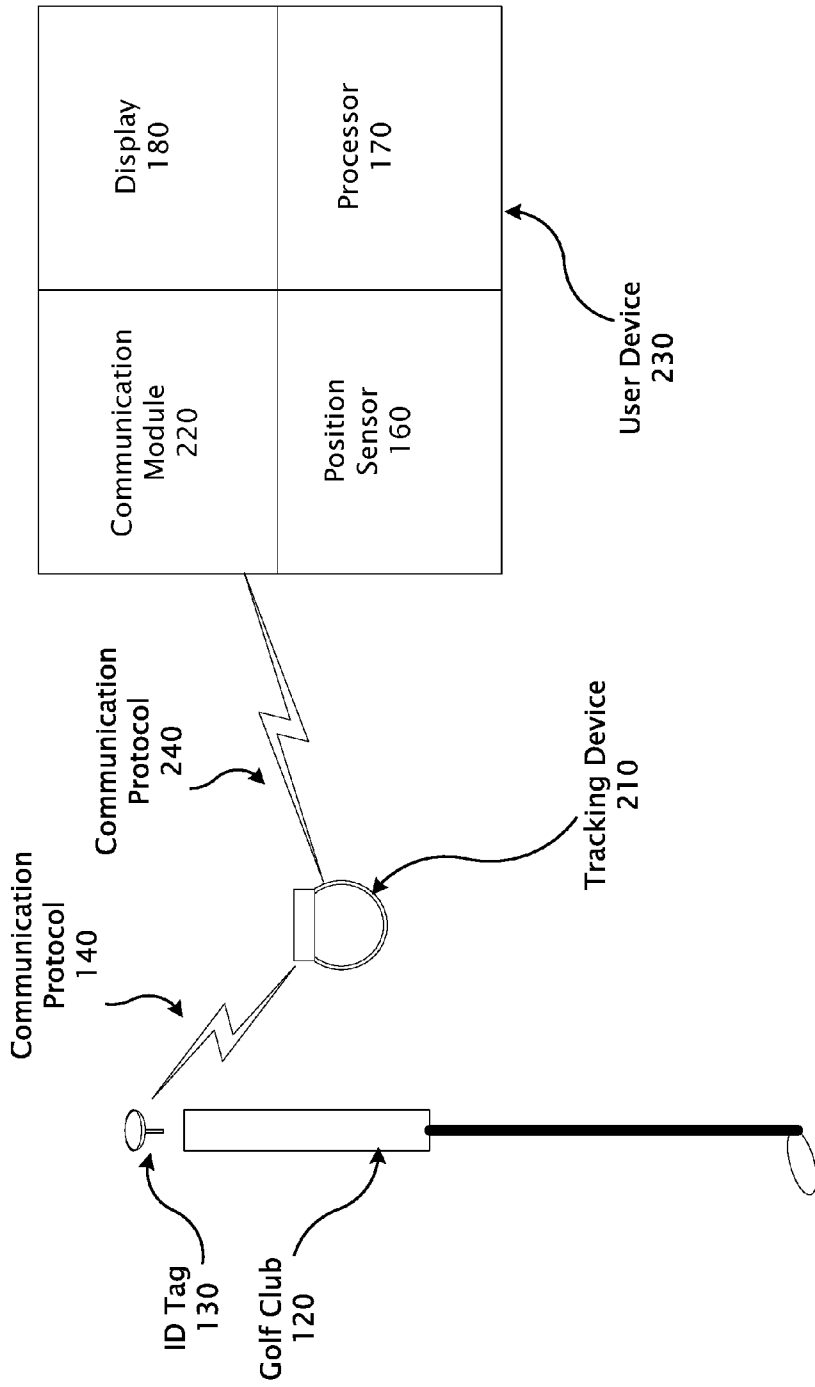


Figure 2

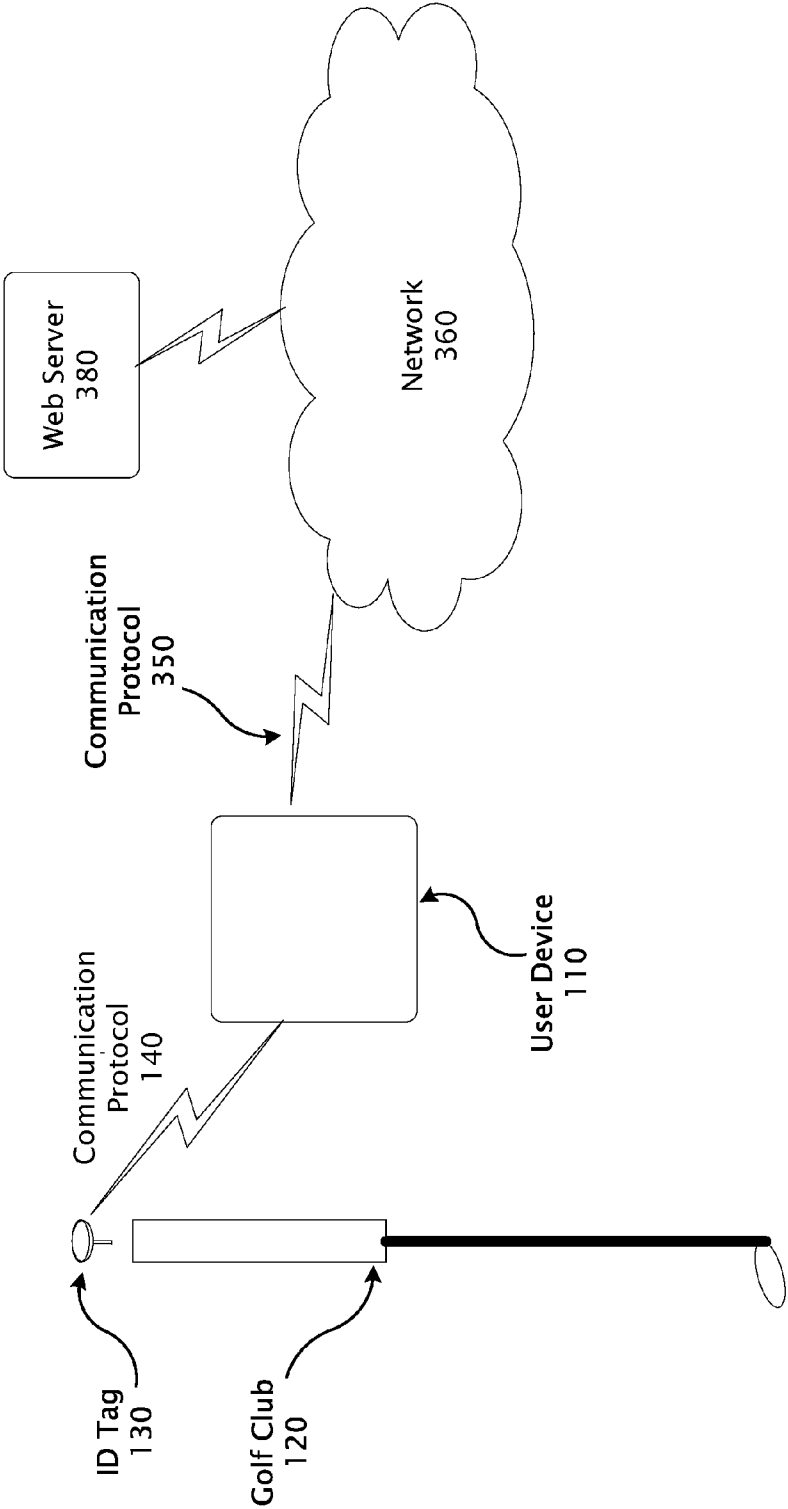


Figure 3

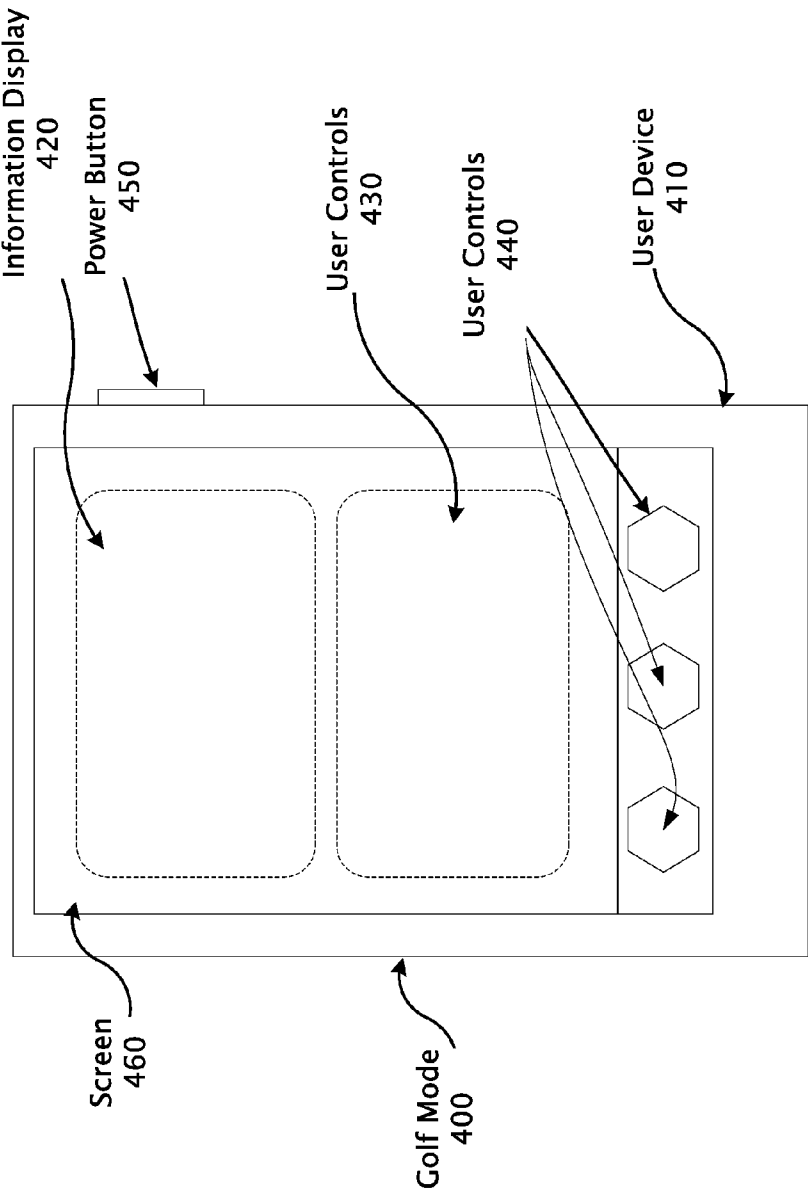


Figure 4

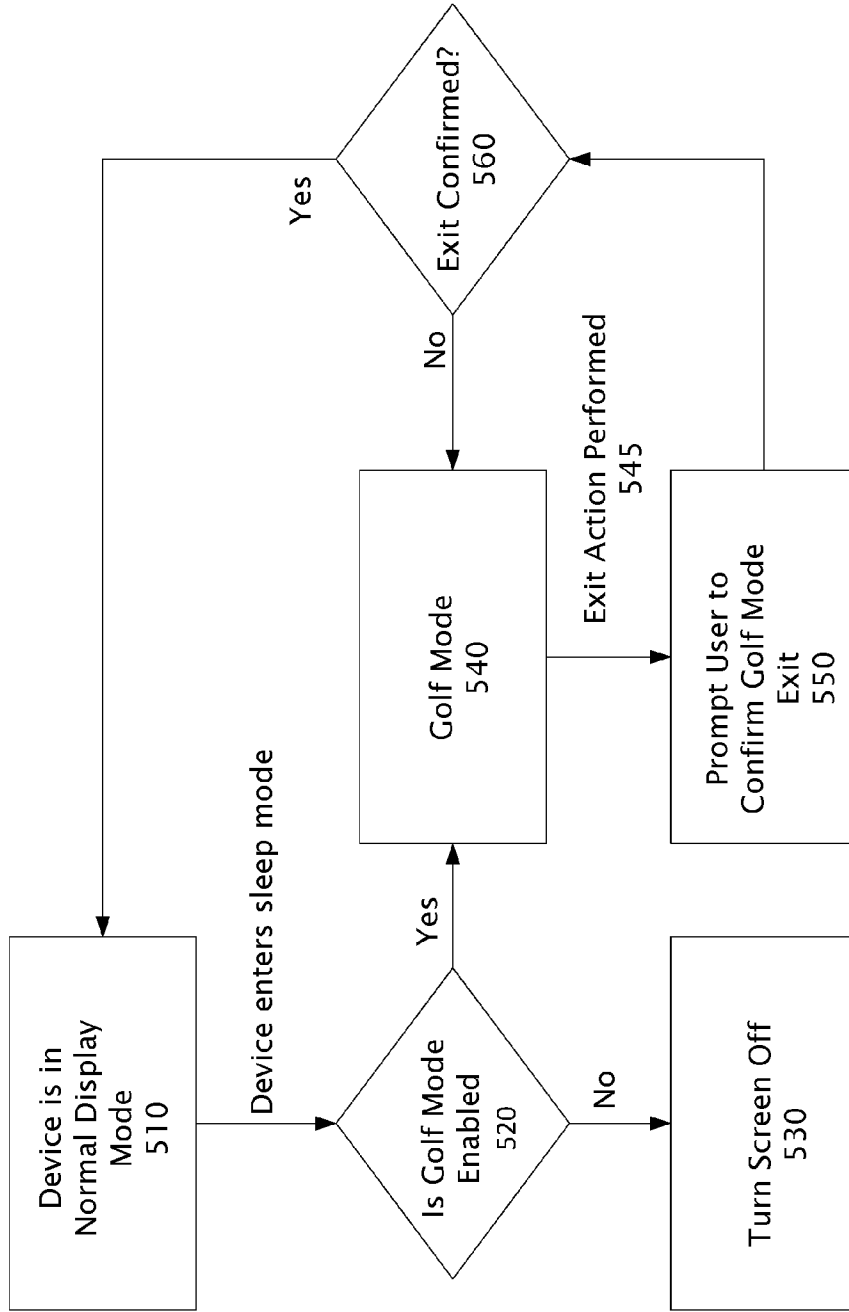


Figure 5

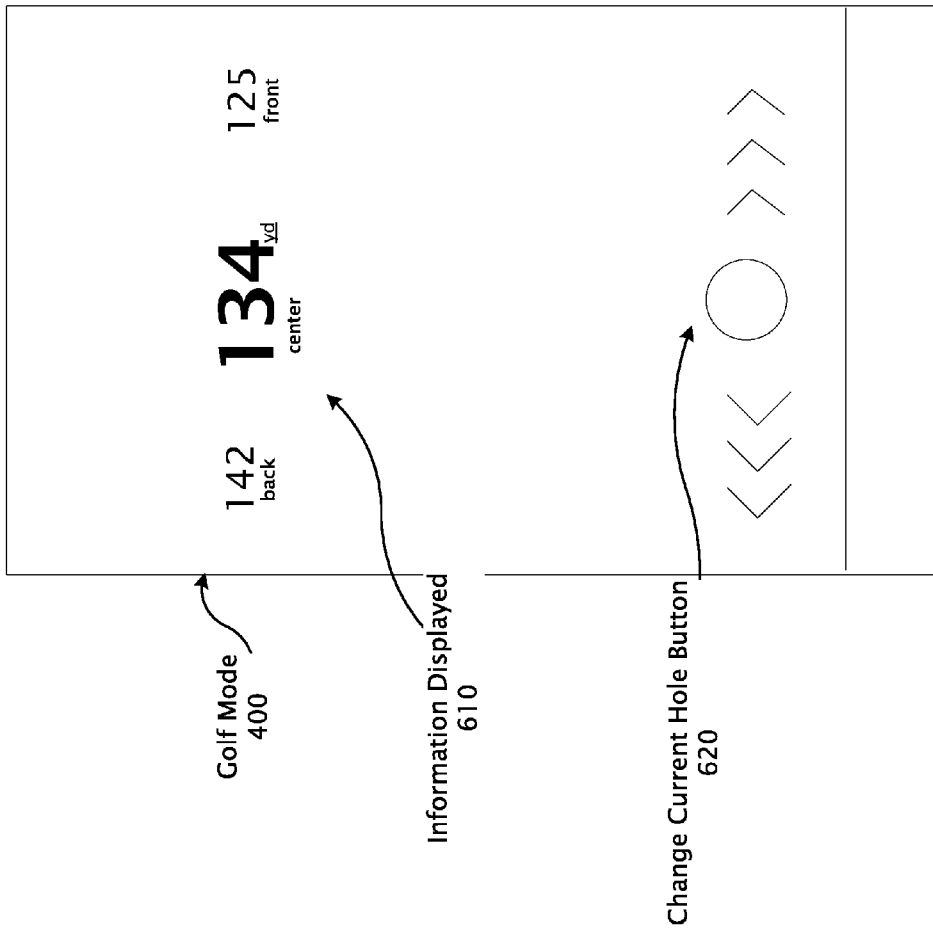


Figure 6

Pebble Beach Golf Links

1	2	3	4	5	6	7	8	9	OUT
4	5	4	4	3	5	3	4	4	36
4	6	5	6	2	5	3	5	5	41

10	11	12	13	14	15	16	17	18	IN
4	4	3	4	5	4	4	3	5	36
4	4	4	5	3	4	4	4	5	37

PREV hole

Stroke Play: 78

NEXT hole

142 back

134 yd center

125 front

5 2 SW 105 yd +2 putts

gps signal

FAIRWAY SAND GIR UNDO

+PENALTY +PUTT +SHOT

Golf Application  
700

Figure 7

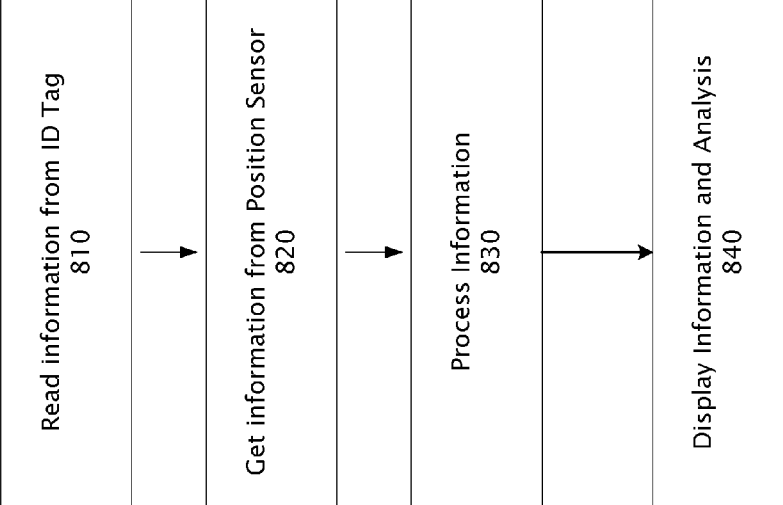


Figure 8

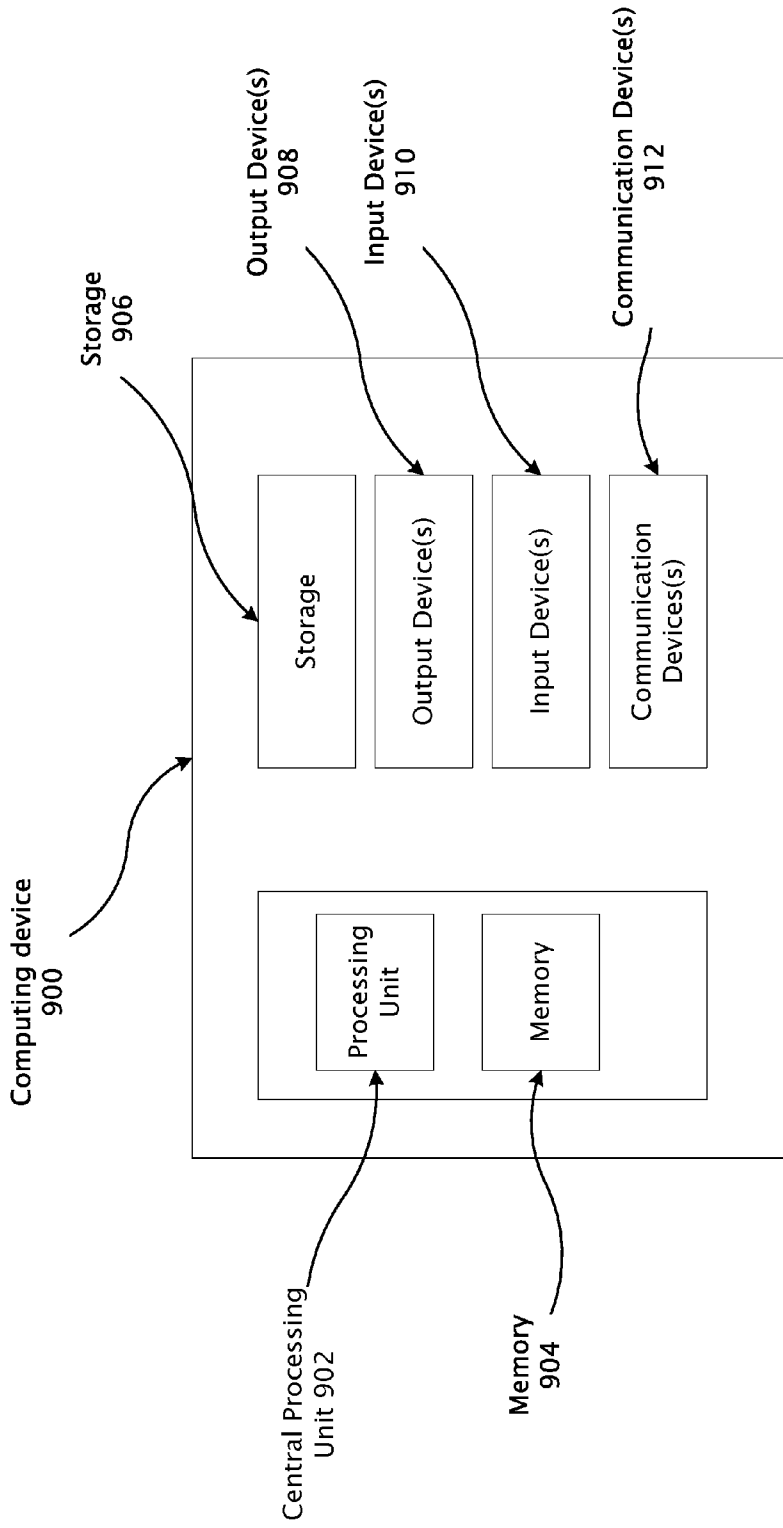


Figure 9

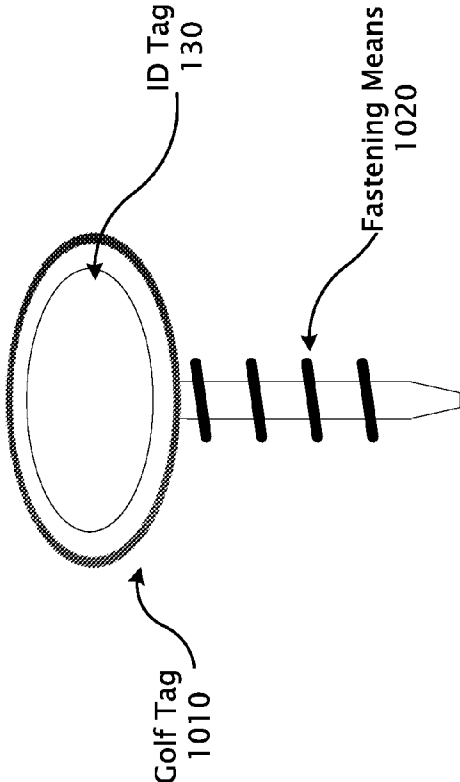


Figure 10

**GOLF TRACKER**

**FIELD**

**[0001]** This disclosure relates generally to a golf tracker.

**BACKGROUND**

**[0002]** There are multiple software solutions on the market that provide golfers with the ability to view and record information related to their golf round on portable computing devices, such as smartphones or tablet computers. A golfer is required to turn on and unlock the device's screen before such information becomes accessible, and then turn off the screen after completing the desired action to avoid unintentional input and/or battery drain. Because golfers need access to a variety of information, such as distance to target, and also need to record game data, such as strokes taken many times during the round, it becomes increasingly distracting and time-consuming to repeat this process, thus reducing the focus and enjoyment of the game.

**SUMMARY**

**[0003]** The following presents a simplified summary of the disclosure to provide a basic understanding to the reader. This summary is not an extensive overview of the disclosure, nor does it identify key or critical elements of the claimed subject matter or define its scope. Its sole purpose is to present some concepts disclosed in a simplified form as a precursor to the more detailed description that is later presented.

**[0004]** The instant application discloses, among other things, tools and techniques which may enable real-time collection and analysis of golf game data. Protocols such as Near Field Communication (NFC) or Bluetooth that enable an electronic device to establish communication with another electronic device, such as a personal computing device, may be used. A computing device may, for example, communicate with an identification tag attached to a golf club. The identification tag may allow recording of a location and a golf club being used without requiring manual data input. Communication with a position sensor, such as the Global Positioning System (GPS), Global Navigation Satellite System (GLONASS), or internet resources may be used to obtain information such as location, time, weather conditions, or other information. Data may also be input manually. Information may also include distance to bunkers, water hazards, or other points on a golf course. An aerial view or a map representation of the golf course may also be presented. Some or all of the information may be displayed on a screen of a computing device. A mode which may reduce battery drain and unintentional user input may be provided.

**[0005]** Real-time and historical data about golf game rounds may be made available to the golfer or other authorized individuals such as friends, trainers, and golf club members, or to the general public.

**[0006]** The ability to collect, analyze and present data related to a golf game in real-time may provide benefits to golf players, allowing them to adjust and improve their performance during the game. Data collected may include, for example, the location of the player on the golf course, the golf clubs used, the location, and length of each shot. Additionally, the data collected may include the player's performance and vital signs, such as heart rate, calories burned, or hand movement during each swing. The data may be collected, analyzed and presented to the player in real time during the game, or

may be recorded to provide an ability to review and analyze the player's performance during the round or in conjunction with other rounds.

**[0007]** Real-time and predictive analysis may be provided. Analysis may include yardage, accuracy, handicap, scoring, penalties, fairways, sand, greens in regulation (GIR), distance walked and percentage breakdowns for eagles, birdies, pars, bogeys and doubles, sand recovery and fairway miss analysis. Other statistics may include distance estimates, fairways hit or missed, distance trends, scoring analysis, course strategy and putting.

**[0008]** Analysis may include data breakdowns per club, for example. For example, you may see shot dispersion for each club. Intelligent suggestions for club selection may be provided, based on factors like distance to target, playing history, elevation change, temperature, humidity, and altitude, for example.

**[0009]** Historical data and statistics may be backed-up. The tools and techniques may be used in a practice mode, for example on driving ranges. A tournament mode may also provide or maintain data conforming to various tournament rules.

**[0010]** A low power lock mode may be initiated by a user. When in this low power mode, battery power may be saved by reducing the brightness of the display. Low power lock mode may also prevent inadvertent user input. A user may manually get out of low power lock mode by a swipe-up action, for example.

**[0011]** Many of the attendant features may be more readily appreciated as they become better understood by reference to the following detailed description considered in connection with the attached drawings.

**BRIEF DESCRIPTION OF THE DRAWINGS**

**[0012]** FIG. 1 illustrates an example of Golf Tracker according to one embodiment.

**[0013]** FIG. 2 illustrates an example of Golf Tracker according to another embodiment.

**[0014]** FIG. 3 illustrates a system capable of supporting Golf Tracker, according to one embodiment.

**[0015]** FIG. 4 illustrates an example of a user interface for a mobile application supporting Golf Tracker according to one embodiment.

**[0016]** FIG. 5 is a flow diagram illustrating a process for a golf mode, according to one embodiment.

**[0017]** FIG. 6 illustrates an example of a user interface for a mobile application of the Golf Tracker according to another embodiment.

**[0018]** FIG. 7 illustrates a user interface for a golf application, according to one embodiment.

**[0019]** FIG. 8 illustrates a flow chart for some aspects of Golf Tracker, according to one embodiment.

**[0020]** FIG. 9 illustrates a component diagram of a computing device according to one embodiment.

**[0021]** FIG. 10 illustrates a golf tag, according to one embodiment.

**DETAILED DESCRIPTION**

**[0022]** A more particular description of certain embodiments of Golf Tracker may be had by references to the embodiments shown in the drawings that form a part of this specification, in which like numerals represent like objects.

[0023] FIG. 1 illustrates an example of Golf Tracker according to one embodiment. ID Tag 130, which may be, for example, an NFC chip, may be attached to Golf Club 120. In another embodiment, ID Tag 130 may be incorporated into a golf club grip, or into a golf club itself.

[0024] ID Tag 130 may have a unique identification, and may be associated with Golf Club 120. ID Tag 130 may provide data, such as information about Golf Club 120, to Tag Reader 150 in User Device 110 via Communication Protocol 140. User Device 110 may use Position Sensor 160, or another auxiliary sensor may be used to collect data such as information about a golf course, a location of a player on the course, or distance or location of a shot. Processor 170 may process information collected from Tag Reader 150 and Position Sensor 160 or user input and may display visualized data and analysis on Display 180. ID Tag 130 may also send information about movement of Golf Club 120 to Tag Reader 150 which may allow, for example, Processor 170 to analyze a swing.

[0025] For example, a player may start with a driver, Golf Club 120, and tap ID Tag 130 against a smartphone, User Device 110. Tapping the smartphone may communicate via Communication Protocol 140, which may be NFC, with ID Tag 130, allowing User Device 110 to record which club was used, and where the shot started. The player may drive the ball, and walk to where the ball stops. Upon choosing another club, Golf Club 125, the player may tap an associated ID Tag 135 against User Device 110. Processor 170 may now use information from Position Sensor 160 to calculate how far the shot went, where it landed on the golf course, or other information, as well as recording the starting point for the next shot.

[0026] One having skill in the art will recognize that other devices, for example smartphone, tablet, laptop computer, smartwatch, or intelligent eyewear, and other communication protocols, for example Wi-Fi, cellular data access methods, such as 3G or 4G LTE, Bluetooth, or NFC, may be used to support Golf Tracker to track golf clubs, location, and other information.

[0027] FIG. 2 illustrates an example of Golf Tracker according to another embodiment. Data from ID Tag 130 may be sent to Tracking Device 210 using Communication Protocol 140. Tracking Device 210 may be, for example, a smartphone, a smartwatch, a device dedicated to supporting Golf Tracker, or intelligent eyewear. Tracking Device 210 may communicate to Communication Module 220 in User Device 230 via Communication Protocol 240. Tracking Device 210 may communicate with User Device 230 in real time, or Tracking Device 210 may store data and transfer data at a later time. User Device 230 may use Position Sensor 160, which may, for example, use GPS or GLONASS, or another auxiliary sensor to collect data such as information about a golf course, a location of a player on the course, or distance or location of a shot. In another embodiment, Position Sensor 160 may be disposed in Tracking Device 210. In yet another embodiment, Position Sensor 160 may be a standalone device. Processor 170 may process information collected from Communication Module 220 and Position Sensor 160 or user input and may display data and analysis on Display 180. Data sent or received may include information about Golf Club 120 such as type of club being used.

[0028] FIG. 3 illustrates a system capable of supporting Golf Tracker, according to one embodiment. User Device 110 may be coupled to a Web Server 380 via Network 360. User

Device 110 may be a smartphone, tablet, laptop computer, smartwatch, or intelligent eyewear, for example.

[0029] Web Server 380 may receive updates from User Device 110. Web Server 380 may host a web site, a dedicated application, or a social network, or it may couple to a social network hosted elsewhere, and may allow status updates, notifications, messages, or other forms of communication about a round of golf to be shared by a Golf Tracker user.

[0030] Network 360 may include Wi-Fi, cellular data access methods, such as 3G or 4GLTE, Bluetooth, NFC, the internet, local area networks, wide area networks, or any combination of these or other means of providing data transfer capabilities. In one embodiment, Network 360 may comprise Ethernet connectivity. In another embodiment, Network 360 may comprise fiber optic connections. User Device 110 may communicate with Network 360 using Communication Protocol 350, which may be any protocol Network 360 supports.

[0031] FIG. 4 illustrates an example of Golf Mode 400 for a mobile application supporting Golf Tracker according to one embodiment. The mobile application may run on User Device 410, which may have Screen 460, Information Display 420, and Power Button 450. If the mobile application detects that User Device 410 is entering a sleep mode, for example because a user presses Power Button 450, because of user inactivity or another time-based event, because the user presses another control, or for any other reason, the mobile application may change to Golf Mode 400, reducing display brightness, which may help preserve battery power, while continuing to display golf game information. This information may include distance to a target, for example, a flag, distance to a front, middle and back of a green, distance to obstacles or layup points, a current score, a current active hole number, lengths of shots, golf club or clubs used, or game statistics. Other information may also be displayed.

[0032] Golf Mode 400 may keep radio communications active, allowing ID Tag 130 to communicate with User Device 410.

[0033] User Controls 430 may be used to mark a stroke, including position and club used, change a score, change the current active hole, input auxiliary game information, such as the type of stroke (chip, pitch, putt, etc.), fairway hit status, fairway miss direction, green hit status, shot shape (pull, push, draw, fade, slice, hook or a combination thereof, mark a position of golf course elements, including but not limited to flag, green, tee box, hazard, fairway, lay-up point, or turn, or undo some of the previous actions.

[0034] While in Golf Mode 400, the mobile application may also restrict, lock or change the use of User Controls 440, or Power Button 450, which may prevent accidental input.

[0035] FIG. 5 is a flow diagram illustrating a process for Golf Mode 400, according to one embodiment. Accidental input by may be prevented by blocking access to some or all device controls. When a user starts Golf Mode, Device may be in Normal Display Mode 510. If Golf Mode is Enabled 520 (no) is not enabled, the device may Proceed to Turn Screen Off 530. If Golf Mode Enabled 520 (yes), then the device may go to Golf Mode 540. When Exit Action Performed 545, the device may Prompt User to Confirm Golf Mode Exit 550. An exit action may be, for example, pressing a power button, or swiping up from a bottom of a screen. If Exit Confirmed 560 (yes), the device may go to Device is in Normal Display Mode 510. If Exit Confirmed 560 (no), the device may go to Golf Mode 540.

[0036] FIG. 6 illustrates a user interface for Golf Mode 400, according to another embodiment. Golf Mode 400 may show Information Displayed 610, which may include, for example, distances relating to a green. Change Current Hole Button 620 may, for example, be swiped right or left to change the current hole being played up or down.

[0037] FIG. 7 illustrates a user interface for Golf Application 700, according to one embodiment. Additional information may be displayed in this embodiment, including scores, distances related to a green, current hole information, or other information.

[0038] FIG. 8 illustrates a flow chart for some aspects of Golf Tracker, according to one embodiment. Golf Tracker may Read Information from ID Tag 810, and Get Information from Position Sensor 820. Based on the information, Golf Tracker may Process Information 830, giving, for example, analyzing a length of a shot that was made, and which club was used to make the shot. Golf Tracker may Display Information and Analysis 840.

[0039] FIG. 9 illustrates a component diagram of a computing device according to one embodiment. Computing Device 900 can be utilized to implement one or more computing devices, computer processes, or software modules described herein. In one example, Computing Device 900 can be utilized to process calculations, execute instructions, receive and transmit digital signals. In another example, Computing Device 900 can be utilized to process calculations, execute instructions, receive and transmit digital signals, receive and transmit search queries, and hypertext, compile computer code as required by User Device 110, 230, 410, Tracking Device 210, or Web Server 380. Computing Device 900 can be any general or special purpose computer now known or to become known capable of performing the steps and/or performing the functions described herein, either in software, hardware, firmware, or a combination thereof.

[0040] In its most basic configuration, Computing Device 900 typically includes at least one central processing unit (CPU) (902) and memory (904). Depending on the exact configuration and type of computing device, memory (904) may be volatile (such as RAM), non-volatile (such as ROM, flash memory, etc.) or some combination of the two. Additionally, computing device (900) may also have additional features/functionality. For example, computing device (900) may include multiple CPU's. The described methods may be executed in any manner by any processing unit in Computing Device 900. For example, the described process may be executed by both multiple CPUs in parallel.

[0041] Computing Device 900 may also include additional storage (removable and/or non-removable) including, but not limited to, magnetic or optical disks or tape. Such additional storage is illustrated in FIG. 8 by Storage 906. Computer storage media includes volatile and nonvolatile, removable and non-removable media implemented in any method or technology for storage of information such as computer-readable instructions, data structures, program modules or other data. Memory 904 and Storage 906 are all examples of computer storage media. Computer storage media includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, digital versatile disks (DVD) or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired

information and which can be accessed by Computing Device 900. Any such computer storage media may be part of Computing Device 900.

[0042] Computing Device 900 may also contain Communications Device(s) 912 that allow the device to communicate with other devices. Communications Device(s) 912 is an example of communication media. Communication media typically embodies computer readable instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism and includes any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared and other wireless media. The term computer-readable media as used herein includes both computer storage media and communication media. The described methods may be encoded in any computer-readable media in any form, such as data, computer-executable instructions, and the like. But computer-readable storage media does not include transient signals.

[0043] Computing Device 900 may also have Input Device(s) 910 such as keyboard, mouse, pen, voice input device, touch input device, etc. Output Device(s) 908 such as a display, speakers, printer, etc. may also be included. All these devices are well known in the art and need not be discussed at length.

[0044] Those skilled in the art will realize that storage devices utilized to store program instructions can be distributed across a network. For example, a remote computer may store an example of the process described as software. A local or terminal computer may access the remote computer and download a part or all of the software to run the program. Alternatively, the local computer may download pieces of the software as needed, or execute some software instructions at the local terminal and some at the remote computer (or computer network). Those skilled in the art will also realize that by utilizing conventional techniques known to those skilled in the art that all, or a portion of the software instructions may be carried out by a dedicated circuit, such as a DSP, programmable logic array, or the like.

[0045] FIG. 10 illustrates Golf Tag 1010, according to one embodiment. Golf Tag 1010 may include ID Tag 130, and a Fastening Means 1020, which may allow Golf Tag 1010 to be fastened to a golf club. For example, Golf Tag 1010 may be screwed into the end of a handle on a golf club.

[0046] While the detailed description above has been expressed in terms of specific examples, those skilled in the art will appreciate that many other configurations could be used. Accordingly, it will be appreciated that various equivalent modifications of the above-described embodiments may be made without departing from the spirit and scope of the instant application.

[0047] Additionally, the illustrated operations in the description show certain events occurring in a certain order. In alternative embodiments, certain operations may be performed in a different order, modified or removed. Moreover, steps may be added to the above-described logic and still conform to the described embodiments. Further, operations described herein may occur sequentially, or certain opera-

tions may be processed in parallel. Yet further, operations may be performed by a single processing unit or by distributed processing units.

1. A system, comprising:
  - a first device, the first device associated with a golf club, comprising an identification tag;
  - a second device, the second device comprising:
    - a processor;
    - memory operably coupled to the processor;
    - a chip configured to receive communications from the first device;
    - software allowing visualization of a position of the golf club on a golf course; and
    - a position sensor.
2. The system of claim 1 wherein the software allows the visualization in real-time.
3. The system of claim 1 wherein the identification tag is attached to a golf club.
4. The system of claim 1 wherein the identification tag is integrated into a grip on a golf club.
5. The system of claim 1 wherein the identification tag is integrated into a golf club.
6. The system of claim 1, wherein the software operates on the second device.
7. The system of claim 1, further comprising a third device, comprising:

a processor; and  
 memory operably coupled to the processor;  
 wherein the position sensor is disposed on the second device, the second device communicates with the third device, and the software operates on the third device.

8. The system of claim 1, wherein the software provides a reduced power mode, restricts user inputs, and keeps radio communications active.

9. The system of claim 8 wherein the software enters the reduced power mode when a user presses a power button.

10. The system of claim 8 wherein the software enters the reduced power mode when a period of inactivity is detected.

11. The system of claim 8 wherein the software displays a hole number, a score, and a distance to the hole.

12. A method, comprising:  
 determining a first location of a first golf club on a golf course;  
 determining a second location of a second golf club on the golf course; and  
 calculating information about a golf shot based upon the first location and the second location; the information including a distance and a direction.

13. The method of claim 12 wherein the information further comprises an analysis of the golf shot including a comparison between a desired location and the second location.

\* \* \* \* \*