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Golf Aid

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**ENGLISH-ABST:**

A golf aid that prevents a user from leaving a golf club too far behind on a golf course. When a golf club is too distanced from the user, the user is alerted to retrieve the lost club. Preferably, a GPS system assists in guiding the user to the location of the lost club. Several golf clubs can be activated to be monitored, so that the user can choose only the clubs that the user is actually playing with, to be monitored in case of loss.

**NO-OF-CLAIMS:** 12

**NO-DRWNG-PP:** 3

**SUMMARY:**

FIELD OF THE INVENTION

[0001] The present invention relates to golfing, and more particularly, relates to a device that allows one to prevent loss of golf clubs.

## BACKGROUND OF THE INVENTION

[0002] One of the best parts of playing golf is seeing sleeping greens and traversing various tracts of land. In a sense, a golfer can become lost from the world as the golfer moves along a golf course from hole to hole. Unfortunately, while playing golf, golfers often are so focused on the game, or are so focused on their visual captivating surroundings, that they simply forget their golf clubs. For example, a golfer might make a shot and lands outside of the putting green. To save time and energy, the golfer will carry with him multiple clubs (putter, chipper, sand wedge, 9 iron etc.) onto the field of play as he determines the appropriate distance and shot to the green. In these instances and after the golfer has chosen his club, the remaining club(s) carried onto the field of play are placed on the ground either during the green approach shot, which normally is a rougher terrain and the club can be obscured in the taller grass, therefore making it difficult to detect, or on the green itself while putting.

[0003] With the challenge, excitement and level of focus of the game on the golfer's mind, all too often the player will leave a club(s) behind as they proceed to the next hole of play. In most instances the club(s) left behind by the golfer are not realized as missing, until sometime later or when the club in question is to be chosen for use again. That's when panic sets in--when, where, how was it lost?

[0004] Thus, there is a need for a device that prevents a golfer from leaving a golf club somewhere on the golf course, for the size of golf courses makes finding a lost club either virtually impossible, or if possible, an arduous task.

[0005] U.S. Pat. No. 6,545,606, issued to Piri et al on Apr. 8, 2003, shows a device and method for alerting to the need to recover something, identifying it and determining its location for purposes of recovery. Piri et al's device is intended for life-saving missions, such that Piri et al's device would be incorporated with a life jacket. Piri et al's device does not provide a solution that could be easily incorporated with a golf club. Thus, unlike the present invention, Piri et al's device does not offer a simple, unobtrusive solution to locating a lost golf club.

[0006] Moreover, Piri et al's device, unlike the present invention, is not designed so as to not interfere with the weight and balancing that a golf club already has. If a golf club is made heavier than desired by adding some kind of loss prevention system, the golf club might not be lost, but a golfer would not want to use such a golf club because it would become cumbersome and overly heavy. Further, unlike the present invention, Piri et al's device is not inconspicuous if it would be attached to a golf club. It is important that the general shape of a golf club is not altered if a tracking device is to be attached. Also, it is important for any user of the present invention that the user's golf clubs do not look any different than a traditional golf club, for the user does not want to call attention to the fact that some kind of tracking device is being used on golf clubs. Piri et al's does not remedy these concerns.

[0007] Similarly, U.S. Pat. No. 6,462,658, issued to Bender on Oct. 8, 2002, describes an object locator and protection system. Bender's device describes a transmitter unit that sends one of a plurality of RF signals upon actuating a first push button, and a receiver unit attached to or incorporated into an object for detecting the RF signals, and illuminating a light element, and/or activating a sound speaker in response to the detected RF signal. Bender's device is concerned with providing an improved locator device for identifying and locating an object, which is inexpensive to produce and operates in a manner that allows the user to find the tagged object easily. In particular, Bender's device tries to avoid costly timer shutoff, costly battery power-saver circuitry, loud, annoying sounds, triangulation locator circuitry and cumbersome encoding elements.

[0008] However, unlike the present invention, Bender's device does not address the problem of incorporating a radio frequency transmitter into or onto a golf club. As aforementioned, the weight of the golf club cannot be adversely affected, or a golfer will not want to use a modified golf club that has an RF transmitter. Further, if an RF transmitter is

to be positioned on a golf club, the RF transmitter must be inconspicuous, for no golfer wants to be the talk of the golf course, as other golfers stare at RF modified clubs.

[0009] In short, a problem exists for identifying golf clubs. RF technology exists and various devices and methods exist in the field of the aforementioned patents that are capable of being stuck onto a golf club. However, none of the relevant art provides a device that can be integrated into a golf club without changing the contour of the golf club, without changing significantly the weight of the golf club, and thus, the relevant art cannot solve the problem that has been presented.

## SUMMARY OF THE INVENTION

[0010] Within the game of golf, it is a common practice for a golfer to carry multiple clubs onto the field of play as they determine the appropriate distance and shot to the green. As a matter of fact, it is golf etiquette when walking from your cart to your ball to take a couple clubs with you. Taking only one club, then having to return to the cart to retrieve a different club, is a huge time-waster.

[0011] There aren't too many things more annoying in the game of golf than discovering that a club or two were left behind two or three holes back. It is common occurrence a golfer will grab several clubs from his bag while his partner takes the cart to the other side of the fairway. The golfer lays his clubs that he doesn't need on the ground while taking his shot. Next thing he knows . . . He forgot the club(s) behind.

[0012] The present invention is a device that assists a golfer in locating a lost golf club(s). The device has two parts. A first part is actually incorporated onto the handle of a golf club or within the handle of a golf club, and that device acts as a transmitter. The second part of the present invention is a receiver. Each golf club in a golfer's golf bag preferably has a transmitter of the present invention. When the golfer is about to play golf, the golfer activates each of the golf clubs' transmitters, and then turns on the receiver of the present invention that remains with the golfer or is attached to the golf bag. If only certain golf clubs are to be used, then only certain golf clubs will be activated to transmit by the golfer.

[0013] If, during a preset time, there is a predetermined loss of transmissions from a particular golf club, then the receiver will alert the golfer that a golf club has been left behind. In turn, the receiver becomes a directional finder, and the stronger the signal from the transmitter, the closer the golfer is to the said club. Preferably, the present invention also incorporates GPS technology, such that the present invention does not just alert a golfer that a golf club has been left behind, but will actually guide the golfer to the abandoned golf club.

[0014] The present invention is an electronic monitoring device using advanced state-of-the-art Radio Frequency Identification (RFID) technology. The present invention emits a subtle alarm warning the golfer that a club(s) has been left behind.

[0015] The device consists of a miniature, lightweight transmitter inserted into the golf club shaft under the club grip. A pager-sized monitor unit, acting as a receiver, can be attached to the golfer's bag, belt or the golf cart, using a conventional plastic spring clip. When the distance between the receiver and the transmitter exceeds the specified limit (200 feet), the subtle alarm is triggered, in addition to a flashing light and vibration.

[0016] The receiver unit--preferably 1.1 inches in depth, 2.9 inches high and 2.7 inches wide--is powered by a replaceable 9v battery and features a flashing red LED and audio location device when activated. The monitor circuit features a "signal strength indicator," alerting the golfer with an escalating beeping pattern, aiding the golfer in finding the lost club by audio direction to the area. The monitor can differentiate between different club codes within the 200 ft. area. Each transmitter is randomly assigned an RFID code. With more than 20 trillion code numbers available, there is virtually no chance any two monitors could be programmed to receive the same transmitter code from a club located in the same course area.

[0017] The embedded transmitter is a miniature capsule--preferably one half-inch in diameter, three inches long and weighing 1.5 oz.--built to withstand any vibration and punishment of repeated swings of the golf club. Easy to install, the transmitter is inserted into the golf club shaft cavity located under the club grip, making it invisible. It is so light that it does not affect the golf swing. Installed by the golfer or at a golf shop during re-gripping, the transmitter can be incorporated into any commercially available, standard 0.6-inch diameter golf club shaft making it accessible to golfers internationally.

[0018] To activate the transmitter the golfer depresses the tiny LED button by inserting a golf tee, pen, key, etc., into the hole located at the end of the club grip. Once activated, the receiver is automatically programmed to identify each club the golfer will be using that round. If a club is left behind, at a distance of 200 feet the receiver will sound the alarm, notifying the golfer that the club is missing. Once the club is retrieved, the golfer simply resets the alarm. After five hours the transmitter automatically goes into sleep mode, until it is activated again.

[0019] Small lithium batteries (similar in size to photo batteries) power the transmitter. Under normal use the life cycle of the batteries will last two seasons and may be replaced when the club is re-gripped. Transmitters are typically placed into most often left clubs on the green, such as putters, chippers and wedges. Though weather proof, the club grip should not be submerged in water.

[0020] The game of golf is a game of the mind. Golfers must maintain their concentration throughout the round to achieve a successful score and distractions are the biggest problem for most golfers. The present invention removes the club loss distraction, giving golfers peace of mind and allowing them to focus. With golfers free from having to search or back track, the overall game should speed up to everyone's benefit. As an added bonus, the golf bag itself is now alarmed by virtue of the monitored clubs. The golfer can securely place his clubs outside the clubhouse or restaurant without fear or worry of it being stolen.

[0021] These together with other objects of the invention, along with the various features of novelty, which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated preferred embodiments of the invention.

#### **DRWDESC:**

#### **BRIEF DESCRIPTIONS OF THE DRAWINGS**

[0022] The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

[0023] FIG. 1 is the preferred embodiment of the transmitter capsule of the present invention.

[0024] FIG. 2 is a cross-sectional view of the transmitter capsule of the present invention.

[0025] FIG. 3 shows a frontal view of the receiver base unit of the present invention.

[0026] FIG. 4 shows a rear view of the receiver base unit of the present invention.

[0027] FIG. 5 is a second embodiment of the present invention.

#### **DETDESC:**

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0028] Referring now to the figures, as shown in FIGS. 1 and 2, the present invention has a capsule housing (10) holding a replaceable battery (20), a processor (30), transmitter unit (40), transmitter antenna (50), switch (60), light pipe (100) and LED button (150). This part of the present invention--the capsule housing (10)--is actually integrated into the golf club grip (not shown). The only part of the capsule housing (10) that will show to the casual observer is the LED button (150), which protrudes discreetly from the top of the golf club grip. Preferably, the capsule housing (10) is made of plastic to keep it lightweight and sturdy with a diameter no greater than the diameter of the grip of a golf club. The battery (20) provides power for the processor (30) and transmitter unit (40).

[0029] FIG. 2 is a cross-sectional view of the transmitter capsule. The shaft of the golf club can also act as an antenna for the transmitter unit (40).

[0030] It is important that the present invention can be activated by the user and, thus, as shown in FIG. 1, LED button (150) acts as an on-off switch located on the top of capsule housing (10). LED button (150) will light up to indicate that the present invention has been activated. In FIG. 2, LED button (150) and light pipe (100) sits slightly under the top surface of the golf club grip, but could also extend out of golf club grip, and similarly, can be pressed to activate the present invention. Because LED button (150) can be seen, the user can actually see when the LED button (150) is lit that the present invention has been similarly activated.

[0031] Transmitter antenna (50) and transmitter unit (40) preferably produce a RF signal at approximately 5-second intervals in order to ping a receiver base unit (200) shown in FIGS. 3 and 4. The receiver base unit (200) of the present invention preferably has a mini-speaker, a receiver antenna (210), a battery (220), a vibrator and an exposed LED encased in a plastic housing (230). It is envisioned that the receiver base unit (200) would have a conventional belt clip (240) and/or attachment ring.

[0032] The receiver base unit (200) would have an optional tamper-proof feature so that the user could carry the receiver base unit (200) easily on their person or on their golf bag. The belt clip (240) would have a latch so that the belt clip is affixed; in this fashion, the removal of the device would take a minimum of two steps, similar to a childproof lock, preventing the receiver base unit (200) from falling off or being stolen. The belt clip (240) can be secured with a clip and pin or some type of locking mechanism. Receiver base unit (200) can also be attached to the golf bag if necessary.

[0033] In another embodiment, chips will be used in the present invention because they have embedded ID code systems, so that the receiver base unit (200) could identify different printed circuit boards so that the receiver base unit (200) would actually be capable of indicating which golf club is missing.

[0034] Another embodiment of the present invention, as shown in FIG. 5, is where the battery (20), processor (30), transmitter unit (40), transmitter antenna (50), and LED light (150) are housed within a dome-like structure (300) that adheres directly to the butt of the golf club grip (310) through conventional adhesives, instead of being fitted inside the grip of the golf club (310).

[0035] The user will have the means to 'teach' the receiver base unit (200) to monitor only the clubs that the user chooses to protect that day. The receiver base unit (200) is turned on; the "teach club" button on the receiver base unit (200) is pushed; each individual club is turned on manually and the receiver base unit (200) will remember which clubs to monitor for 8 hours. The memory then resets itself, or it can be reset by the user. The receiver base unit (200) may have memory so that it can remember club settings and different sets of clubs (for example, if a user has a preference of which clubs to use on a rainy versus a sunny day.).

[0036] This allows the monitoring of golf clubs that the user intends to leave at certain positions, or lend to other players. The transmitter unit (40) and processor (30) of the capsule housing (10) are in sleep mode until they are activated, or pinged, by the receiver base unit (200) at which time they begin to send out a signal. It is envisioned that a time-out mechanism that is conventional in nature could be implemented to save battery life and preserve batteries (20).

[0037] The system may also feature an automatic 'self teach' mode whereby the receiver base unit (200) can identify the clubs to monitor simply by activating each club's transmitter. This would mean that the receiver base unit (200) could be triggered to add or subtract clubs on demand (but it would not add or subtract sets of golf clubs).

[0038] In another embodiment of the present invention, LED buttons (150) are embedded into capsule housing (10) such that LED buttons (150) are not visible. For example, LED buttons (150) could be as tiny as the tip of a pen and require a pen tip to actually activate them.

[0039] A preferred embodiment of the present invention has transmissions in the frequency of 916 megahertz, since this meets government-accepted regulations; other FCC approved frequency ranges could potentially be used. Groups of pulses are transmitted every 5-10 seconds. In actual operation, if, for example, the time passes and the receiver base unit (200) does not receive three transmissions during that time from transmitter antenna (50), then the receiver base unit (200) will alert the user that a golf club has been left behind.

[0040] Accordingly, the receiver base unit (200) would, in one embodiment, ping each processor (30) to determine how many golf clubs are going to be used and tagged. Then the user would press a set button on the receiver base unit (200) to either activate the receiver base unit (200) to ping for clubs, or confirm that the receiver base unit (200) has pinged all the clubs to be used in a game of golf.

[0041] Directional receiver base units may be used to indicate signal strength and thus act as distance/direction locaters to help locate a missing club by sounding a pulsed alarm much like a gigercounter.

[0042] The present invention also preferably has a global positioning system, or GPS system, with alarm or display, that becomes louder or softer, or flashes more frequently, as the user gets closer with the receiver base unit (200) to a particular golf club that has been left behind. Thus, the receiver base unit (200), rather than merely indicating that a golf club has been left behind because a certain range between a club and the receiver base unit (200) has been achieved, and actually helped the user determine how close the user is getting to that lost club as the user walks with the receiver base unit (200) closer to the golf club with the incorporated transmitter capsule.

[0043] In any embodiment, the receiver base unit (200) may be worn on the user, and functions as both a lost club alarm and an anti-theft device/alarm for the entire golf bag. For example, if the user were to take a break, go into the clubhouse (restaurant, bar, restrooms etc.), he/she could wear the master transceiver on their person. In the case of theft of the golf bag and clubs, the receiver base unit (200) would alert the user who may still be otherwise occupied inside that their clubs are being taken.

[0044] Although in a preferred embodiment, there is a predetermined distance at which an alert would be sounded, it is contemplated that alternative embodiments could have some indication means, whether audible, or visual, would indicate distance between the transmitter unit (40) and receiver base unit (200). Such alternative embodiments would be useful should the user want to find a misplaced club, but not be far enough to trigger an alert that might sound, should the user move on to the next hole and leave a golf club on a hole just played. The distance between the transmitter unit (40) and receiver base unit (200) would preferably be based on the signal strength between the transmitter unit (40) and receiver base unit (200).

[0045] With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present

invention.

[0046] Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

**ENGLISH-CLAIMS:**

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What is claimed is:

1. A golf aid for a user, the user employing a golf club with a handle and a shaft, comprising: a housing; a transmitter unit within said housing; a battery within said housing; a processor in communication with said battery; a receiver base unit in communication with said transmitter unit.
2. A golf aid as in claim 1 wherein said transmitter unit and said receiver unit are configured to function as a directional club locator.
3. A golf aid as in claim 1 wherein said transmitter unit and said receiver unit have self-identifying RF ID codes.
4. A golf aid as in claim 1 wherein said receiver unit is configured to be worn on the user.
5. A golf aid as in claim 1 wherein said receiver unit alerts the user when said receiver unit is separated a predetermined distance from said transmitter unit.
6. A golf aid as in claim 1 wherein said receiver unit alerts the user as the user increases and decreases distance from said transmitter unit.
7. A golf aid as in claim 1 wherein LED buttons are embedded in said housing.
8. A golf aid as in claim 1 wherein said transmitter unit is configured to be embedded within the handle of the golf club.
9. A golf aid as in claim 1 wherein said transmitter unit is configured to be attached to the handle of the golf club.
10. A golf aid as in claim 1 wherein said transmitter unit is configured to communicate with the shaft of the golf club.
11. A golf aid as in claim 1 wherein said transmitter unit is configured to transfer an electrical signal to the shaft of the golf club.
12. A golf aid as in claim 1 wherein said processor is configured to indicate distance between said transmitter unit and said receiver unit.

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