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P. H. MALLORY, JR

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INDICATING DEVICE

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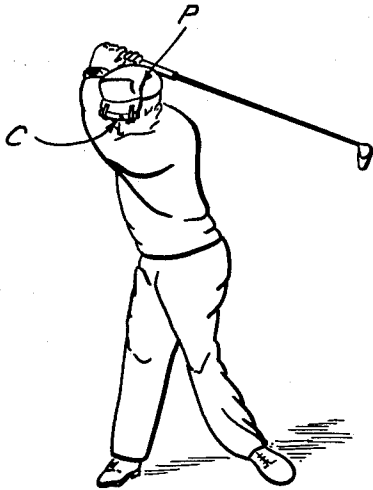


Fig. 1

Fig. 2

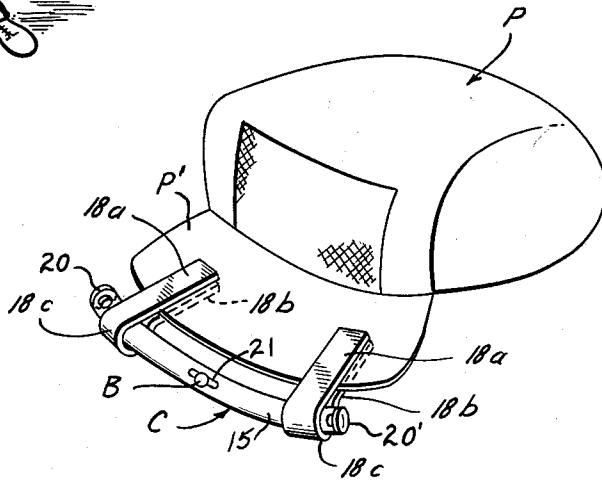
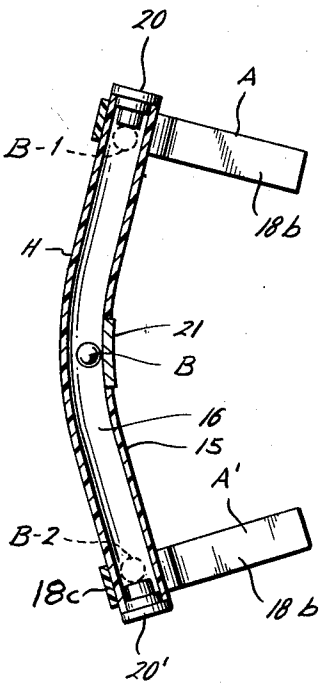


Fig. 3



Paul H. Mallory, Jr.
INVENTOR.

BY *Hayden & Pravel*

ATTORNEYS

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INDICATING DEVICE
 Paul H. Mallory, Jr., 8215 Leader, Houston, Tex.
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This invention relates to new and useful improvements in indicating devices, and particularly to devices for indicating movements of the head or the like in the game of golf.

Many people seek rest and relaxation by participating in sporting events as opposed to observing experts who perform the sport with great skill. Logically, those who enjoy a game now and then are not as efficient or talented as the full time professional. This conclusion readily applies to those who play golf during their leisure hours. Many attempt the game and very few have sufficient proficiency to shoot a par game or better. The fact that many play golf, only when free to do so, means that long intervals may pass between games. The intervals have the effect of introducing additional flaws into the style of an unskilled player whose style was perhaps improper originally.

This invention is an aid which indicates to a golfer that his golfing form is improper. Many golfers allow bad habits to destroy proper form with the habits becoming more rigidly adhered to as time passes. In the past, the advice of an expert has often been needed to tell the puzzled golfer exactly what he is doing improperly.

This invention makes it possible for the golfer himself to correct his own difficulties by providing an indication or signal if the golfer improperly moves his head. Thus, this invention is a particular aid in reminding the golfer to "keep his eye on the ball," and although especially valuable to the casual golfer, it may also be a significant aid to more experienced golfers and even professionals.

An object of this invention is to provide a new and improved indicating means which is particularly suitable for indicating the movements of the head or the like in the game of golf.

An important object of this invention is to provide a new and improved indicating means for indicating to a user the movements of his head or another part of his body, whether in golf, baseball or other activity wherein such movements are significant.

A further object of this invention is to provide a new and improved indicating means for reminding the user when he has taken his eye off the ball before hitting it.

Another object of this invention is to provide a new and improved means for use by a golfer to indicate either proper or improper form.

An important object of this invention is to provide a new and improved indicating means which indicates to a user motion of his head or another part of his body exceeding a predetermined amount of movement.

Still another object of this invention is to provide a new and improved indicating means having magnetic means therewith which hold an indicator element until a predetermined minimum amount of motion of the user's head or another part of his body occurs.

Still another object of this invention is to provide a new and improved indicating device which is usable interchangeably by both left and right handed sportsmen.

Yet a further object of this invention is to provide a form indicator which may be easily reset after each use.

Other objects and advantages of the present invention will become more readily apparent from a consideration of the drawings wherein:

FIG. 1 is a perspective view of a golfer using the present invention and with his club at the top of his backswing;

FIG. 2 is an isometric view of the indicating means of this invention attached to a cap for use; and

FIG. 3 is an enlarged cross-sectional view of the invention taken along a diameter of the tubular housing lying in a horizontal plane.

In the drawings, the letter C generally designates the indicating device of this invention. Briefly, such device C has a housing H with a ball B or other movable member which is adapted to move in response to movements of the head or another part of the body of a user to indicate to him such movements. Preferably, the housing H has attaching means such as indicated at A and A' for attaching said device C on the cap P of the user to facilitate its use. The indicating means C of this invention is particularly useful for golfers, although it will be evident from the description hereinafter that this invention may have other uses.

Considering the invention in greater detail, the housing H has a tubular member 15 which is adapted to contain a movable indicator member such as the ball B in a channel or passage designated by the number 16. The tubular member 15 is preferably made of a thermosetting plastic such as methyl methacrylate or polyvinyl acetate, for ease of manufacture, but other materials in various shapes may be used so long as they provide a channel for the movement of the ball B. Also, in order to visually indicate the movements of the ball B, the member 15 should be transparent. The tubular member 15 is shown in FIG. 2 as being about six inches long but it may be appreciated that other lengths may be desirable for various applications of the indicating device C of this invention.

Each of the attaching means A and A' may be made of a pair of fingers or grippers such as the upper gripper 18a and the lower gripper 18b. The grippers 18a and 18b may be made from the same material as the tubular member 15, if desired, or from any other suitable material. Preferably, the grippers are resilient and are adapted to be spread apart for attaching on the bill P' of the cap P so as to frictionally grip such bill P'. It will be appreciated that other attaching means for the indicating device C may be used for attaching the device C to the cap P or any other object or part of the body. The grippers 18a and 18b are ordinarily integrally joined by a curved portion 18c which is bonded or otherwise suitably attached to the tubular means 15.

In the preferred embodiment, the housing H is completed by covering the end openings of the tubular member 15 with contact magnets 20 and 20'. The contact magnets 20 and 20' provide a sounding or indicating surface for the ball B as it rolls or moves to the outer extent of the channel 16. Although the ball B may be made of various materials, it is preferably made of a ferromagnetic material so that each of the indicating magnets 20 and 20' exerts an attractive force on the ball B when the ball B is within its magnetic field. The presence of the magnets at each end of the channel 16 thus may provide for an accelerated movement of the ball B prior to contacting one of the indicating magnets 20 and 20' for thereby increasing the impact of the ball B with the magnet and the sound level thereof for a louder indication of the ball movement. Also, the accelerated ball movement provides an impact which is physically sensed by the user through the cap P. Normally, when the ball B contacts either of the magnets 20 or 20', it is releasably held in such contact for continuous visual indication until the device C is manually reset, as will be explained.

The ball B is maintained in an intermediate position (solid line in FIG. 3) by the magnetic influence of a bias magnet 21. The bias magnet 21 provides a centralized holding force on the ball B or other indicating means so that the indicating device C is operable in two directions as will be more fully explained hereinafter. The biasing

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force of the magnet 21 on the ball B prevents the indicating device C from being actuated by small or incidental movements of the head or another part of the user. When the movement imparted to the indicating device C is large enough to free the ball B from the bias magnet 21, the ball B may move in the channel 16 to either end thereof to assume a position indicated by the dotted line representation B-1 or B-2. The force required to release the ball B from the magnet 21 for rolling in the channel 16 depends on the magnetic qualities of the ball B and the strength of the magnet 21.

In the use of the indicating means C, it is attached to some object capable of movement for informing the user of movements of the objects by giving an audible and/or visible signal or other indication. As an example, a golfer may attach the indicating means C to the bill P' of his cap P as shown in FIGS. 1 and 2.

Success in the game of golf depends on many factors but perhaps the largest factor is proper form or style. The indicating means C may be used to give signals or other indications of proper or improper form. If a golfer has a tendency to look over his rearward shoulder when his club is at the top of his back swing, the indicating device will be tilted to such an extent that the ball B will roll through the channel 16 and contact the magnet 20. If a golfer tends to look down course prematurely, the ball B will roll in the channel 16 and contact the magnet 20'. The user of this invention may see the ball B roll across his field of vision, may hear the ball B as it rolls in the channel 16, may hear or feel the ball B contact either the magnet 20 or 20'. Such indication or indications provide information related to proper movement of the golfer's head. Thus, the golfer who inadvertently jerks his head rearwardly or looks rearwardly on his backswing may stop his backswing when he receives the appropriate indication and begin the backswing anew. If the golfer does not choose to stop his backswing, he at least will know that he has made the improper movement so that he can correct such movement on his next stroke. On the downswing, the proper head movement will also be indicated by comparing the time relationship existing between the signal given by the indicating means C and the impact of his club with the golf ball. If the golfer has proper form, he will hit the golf ball before he looks down course during his follow-through, and therefore, the ball B should reach the position B-2 before the golf club contacts the golf ball. If the golfer looks down course prematurely, the "click" or other indication will occur before the golf club contacts the golf ball. The golfer may use the information gained from the time relationship of the signal from the device C and the impact of the golf club on the golf ball to change his form if necessary on the next stroke.

After the golfer concludes his swing, the ball B will be at one of the two indicated locations, B-1 or B-2. The ball B may be released from the attraction of either of the magnets 20 or 20' by tapping on the indicating device C near the magnet 20 or 20' holding the ball B. A gentle tap will free the ball B to roll in the channel 16 until the magnet 21 attracts the ball B to a position ready to be used again. The indicating device C may be reset after each use of the invention in about one or two seconds.

It is possible for a golfer to have head movements which cause the ball B to travel to one end of the channel 16 and then travel to the other end of the channel 16 on one golf stroke. This may be prevented by making either

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magnet 20 or 20' stronger. The stronger magnet will hold the ball B after it contacts the magnet to prevent the ball B from moving to the other indicating position.

A somewhat similar modification is changing the length of the channel 16 or the location of the magnet 21 with respect to the center of the channel 16. Also, one of the magnets 20 or 20' may be omitted on an optional basis. Any of the changes may be made to better adapt the indicating device C for other applications.

The indicating means C has other applications. It may be used to indicate movement of any object where the movement of the object is consequential. The indicating device C may be attached or otherwise secured to some portion of a person or user to give indications related to bodily motion, posture, athletic form, or the like. It could be used to indicate motion of machinery or other objects capable of locomotion. Certain modifications may be made in the indicating means C. The ball B may be painted or colored to be more easily noticed. A metallic cup, made of metal such as used in chimes or cymbals, may be placed over the magnets 20 and 20' to increase the noise made by the ball B. As will be understood by those skilled in the art, the movements of the ball B may also be used to actuate electrically operated systems for producing signals or indications.

The foregoing disclosure and description of the invention is illustrative and explanatory thereof and various changes in the size, shape and materials, as well as in the details of the illustrated construction, may be made within the scope of the appended claims without departing from the spirit of the invention.

What is claimed is:

1. An indicating device for indicating a golfer's swing form, comprising:

- (a) a hollow transparent tube having open ends;
- (b) attaching means provided on said tube for securing said tube on headgear of the golfer for obtaining a self-indication of his swing form;
- (c) end closure means including first and second magnets positioned in said open ends;
- (d) a third intermediate magnet mounted in the wall of said tube between said closure means;
- (e) a ball disposed within said tube and releasably engaged with said intermediate magnet in the starting position thereof; and
- (f) said ball being releasable from said intermediate magnet solely by non-magnetic forces for movement to a stop position in engagement with one of said first or second magnets.

2. The invention of claim 1 wherein said third magnet provides means biasing said ball against preselected non-magnetic forces.

3. The invention of claim 1 wherein said attaching means are adapted to secure said hollow tube on a golfer's cap to be viewed by the golfer.

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