Sept. 15, 1970 G. GUNN, JR 3,528,664

GOLFER'S STROKE TIMING AID

Filed Jan. 16, 1969 2 Sheets-Sheet 1

Fig. 2.

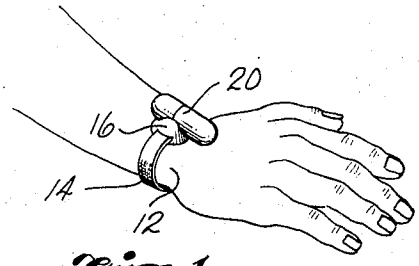
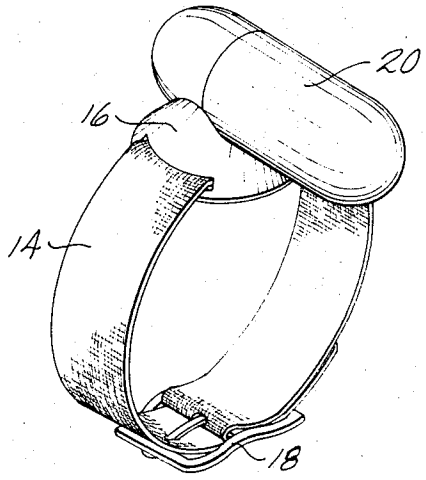


Fig. 1.



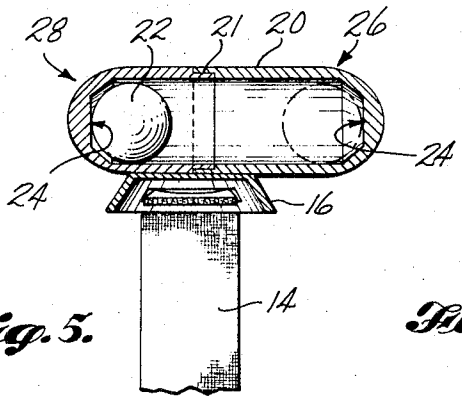


Fig. 5.

Fig. 3.

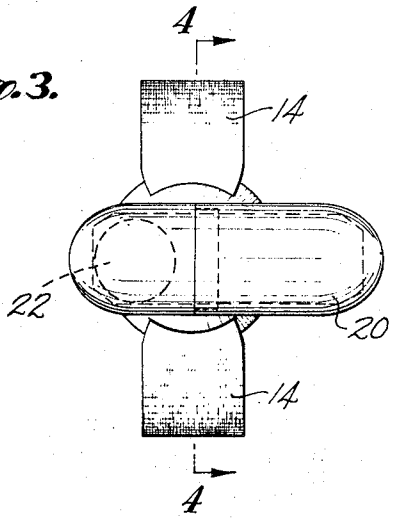
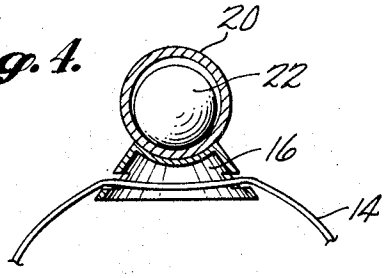


Fig. 4.



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GOLFER'S STROKE TIMING AID

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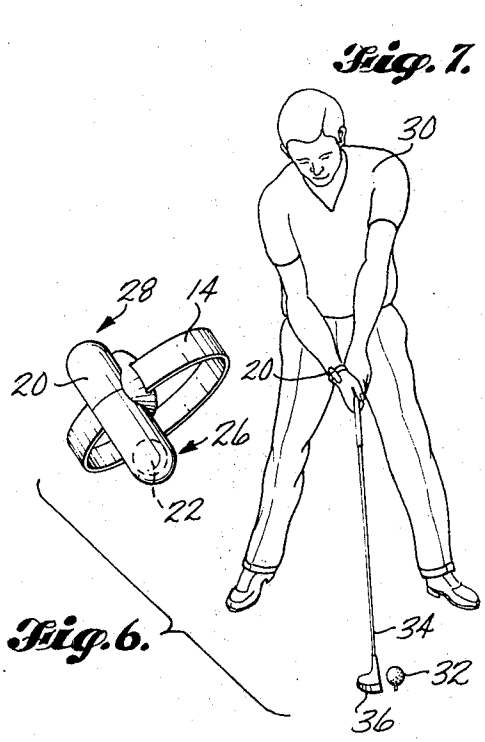
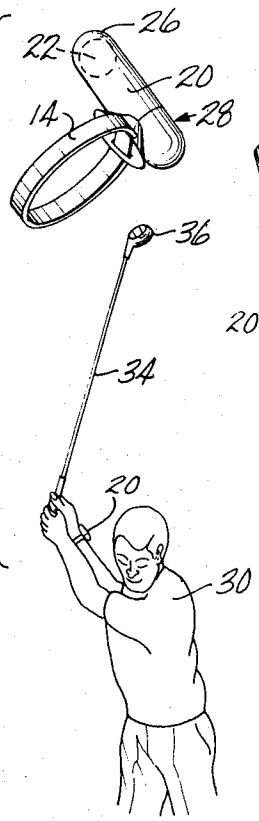


Fig. 6.

Fig. 7.



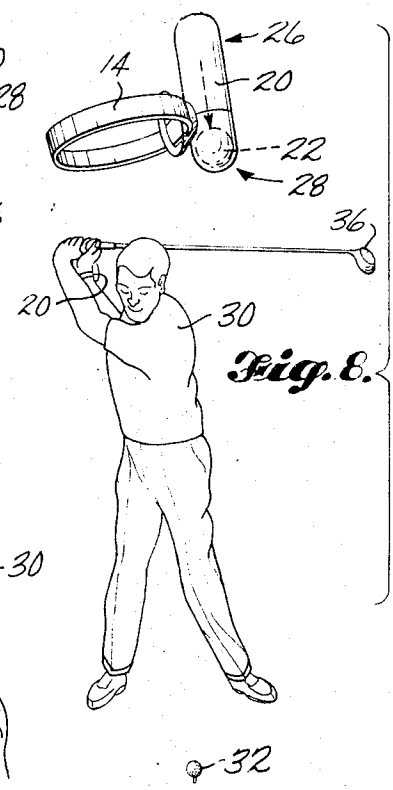
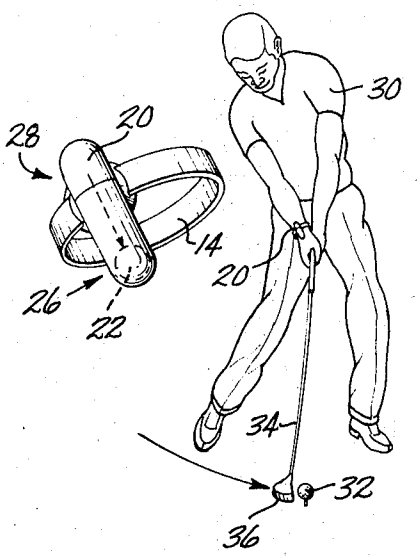


Fig. 8.

Fig. 9.



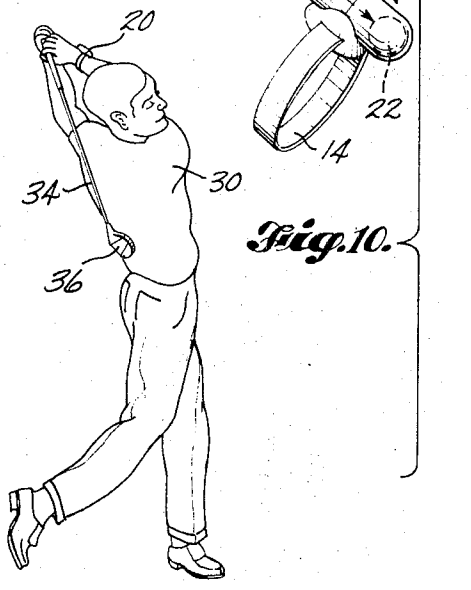


Fig. 10.

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GOLFER'S STROKE TIMING AID

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Int. Cl. A63b 69/36
U.S. Cl. 273—183 4 Claims

ABSTRACT OF THE DISCLOSURE

The invention relates to a golfer's stroke timing aid and follow through indicating device to be worn on a golfer's wrist. A preferably metallic, tubular member has a longitudinally extending passageway in which a metallic ball may be mounted to travel. The tubular member is mounted to one side of the longitudinal center thereof by a cup-shaped mounting means and with the open end of the cup-shaped mounting means directed toward the wrist of the golfer. The impact of the ball in contacting an end portion of the tubular member may be sensed by sound and feel by the golfer. Also, by the off-center mounting, the angular position of the tubular member is responsive to "cocking" of the wrist of a golfer.

My invention relates to a golfer's stroke timing aid and follow through indicating device for monitoring a golfer's swing of a golf club (both "wood" and "iron" clubs) and which device will provide signals to indicate conditions existing during such swing of the golf club.

More particularly, my invention relates to such a device to be worn on a golfer's wrist (on the right and left wrists, respectively, of right- and left-handed golfers, but being described herein in the interest of brevity only on the right wrist of a right-handed golfer) and which device will provide the signals during the golfer's swing and which signals may be sensed by the golfer by ear and/or by feel.

It has been long recognized that better golf requires a set rhythmic pattern in swinging a golf club. This pattern includes, inter alia, the proper execution and integration of the various components of the golf swing, such as: addressing the ball, the back swing, the down swing of the club head into contact with the ball, and the follow through.

With due consideration of the foregoing, it is an object of this invention to provide a device which will provide signals from which golf stroke errors may be detected, such as an abbreviated back swing, a failure to cock one's wrists at the top of the back swing, a failure to pause at the top of the back swing, and a failure to follow through after hitting the ball.

A more specific object of my invention is to provide a metallic tubular member mounting a metal ball for travel lengthwise thereof to provide for an enhanced audible signal when the ball strikes either end of the tubular member.

A further object is to provide a cup-shaped mounting means having the closed end portion thereof rigidly secured to the tubular member and having the open end portion thereof adapted to contact the wrist of a golfer. Thus, as a ball travels from one end to the other of said tubular member, and strikes the said other end, a signal is provided which may be sensed by the golfer both by ear and by feel.

A further object is to connect said tubular member to said mounting means at an area longitudinally offset of its length so that when said mounting means in strapped to the wrist of a golfer, the tubular member will extend longitudinally of the wrist of the golfer and the tubular

member may be tilted upon the "breaking" of the wrists of the golfer.

A further object is to provide a tubular member having each of the inner central end portions thereof extending or indented inwardly thereof to ensure that each of such portions will be contacted by a ball traveling in said passageway in one direction, thus providing for enhanced audible indication and enhanced vibration as the traveling ball engages an end portion of said tubular member.

The foregoing general objects of my invention, together with others explicit as well as implicit in the same, will appear as the detailed description of my invention proceeds in connection with the drawings, wherein my invention is illustrated in connection with golf "wood" clubs. However, as will appear, my invention may be used in connection with golf "iron" clubs. Also, in said drawings, like reference numerals indicate like parts, and in said drawings:

FIG. 1 is a perspective view of a device of my invention secured to the wrist of a golfer, as the right hand of a right-handed golfer;

FIG. 2 is a detached perspective view, on an enlarged scale as respects FIG. 1, and being approximately of full size, of my device;

FIG. 3 is a plan view thereof;

FIG. 4 is a fragmentary sectional view, with parts in elevation, and taken substantially on broken line 4—4 of FIG. 3;

FIG. 5 is a fragmentary sectional view, with parts in elevation, and taken substantially at right angles to the showing of FIG. 4;

FIG. 6 is a view of a golfer addressing a ball and with the device of my invention shown detached and enlarged and in the relative position in which it would be during such addressing of the ball;

FIG. 7 is a view similar to FIG. 6, but an intermediate view, showing the relative positions at the top of the back stroke;

FIG. 8 is a view showing the relative position after the "breaking" of the wrists and at the end of the back stroke;

FIG. 9 is another similar view and showing relative positions at substantially the time of hitting of the ball; and

FIG. 10 is a similar view at the time of the end of the follow through after the hitting of the ball.

In FIG. 1 of the drawings, the wrist **12** of a golfer is encircled by the strap **14**. The strap **14** is connected, in any conventional manner, to a cup-shaped and preferably metallic, mounting means **16**. The strap **14** is preferably of the non-elastic type and is provided with a conventional buckle means **18** so the strap **14** and the parts carried thereby may be attached to or removed from the wrist of a golfer. As previously indicated, the showing in FIG. 1 is the attachment of the device to the right wrist of a right-handed golfer. The same device may be used on the left wrist of a left-handed golfer and the parts will be positioned relatively the same.

The cup-shaped mounting means **16** has its open end portion extending toward the wrist **12** of the golfer and has its closed end portion extending toward and is rigidly secured to the tubular member **20**. The contacting areas of the mounting means **16** and the tubular member **20** (both are preferably metallic) are accurately interfitted so that the two members may be rigidly secured together by such expedients as adhesives, welding, soldering, or the like.

The tubular member **20** is hollow and provides for a longitudinal passageway in which a preferably metallic ball **22** may freely travel from one end to the other end thereof. Preferably, the end portions of the tubular member are half spheres and with the central inner end portions **24** thickened to provide inwardly indented or ex-

tended portions, as best shown in FIG. 5, to ensure contact by the metallic ball **22** with a minimum area of the tubular member **20** as the ball **22** travels from one end of the tubular member **20** to the other end thereof, such as from the dot-and-dash line position to the full line position shown in FIG. 5 of the drawings. I have found that such construction provides for maximum audible indication and maximum vibration response to the travel of the ball from one of said positions to the other.

The tubular member **20** is fabricated from two pieces (as best shown in FIG. 5). The ball **22** (for example, a ball bearing) is inserted in place and then the two pieces of the tubular member are secured together by appropriate procedures, such as including adhesives, welding, soldering, or the like. The juncture or seam **21**, between the two parts of tubular member **20**, may be a butt joint or may be a "shiplap" joint. However, the joint should be located to be spanned by the mounting means **16**. Thus, when the mounting means **16** is secured to the two parts of the tubular member **20**, the mounting means **16** functions to reinforce the connection between said two parts.

The tubular member **20** is secured to the cup-shaped mounting means **16** at an area longitudinally offset relative to the center of its length, thus providing a greater length of said tubular member on one side of said cup-shaped mounting means over the part extending to the other side thereof. In other words and with reference to FIG. 5, the end portion **26** (hereinafter called the longer end portion) of the tubular member **20** extends further from the longitudinal center of the mounting means **16** than does the other end portion **28** (hereinafter called the shorter end portion) of the tubular member **20**. Also, the tubular member **20** extends substantially at right angles to the strap **14** and thus may be extended substantially longitudinally of the wrist of a wearer, as a wrist **12**. The longer end portion **26** is preferably positioned in the direction of the fingers of the wearer, so that as the hand of the wearer is bent backwardly at the wrist or the wrist is "broken," the back of the hand of the wearer will engage the longer end portion **26** of the tubular member **20** and cause a tilting motion of the tubular member **20** about the mounting means **16** as a center whenever the wrist of the wearer is "broken." Thus, whenever the wrists of the golfer and the tubular member **20** are in the appropriate positions, just prior to assuming the position shown in FIG. 8 of the drawings, and the wrists of the wearer are thereafter "broken" or the hand is turned at the wrist backwardly as the wrists are broken so as to assume the position shown in FIG. 8 of the drawings, then the tubular member **20** will be tilted and the ball **22** will move from the position in which it is shown in FIG. 7 of the drawings to the position in which it is shown in FIG. 8 of the drawings.

FIGS. 6 to 10 depict a golfer using a "wood" rather than an "iron" golf club and the discussion thereof, therefore, will be primarily applicable to "woods." However, variations applicable to "irons" will be discussed later.

Now, considering the relative position of metallic ball **22** in the tubular member **20** and the various positions of the golfer and the golf club as shown in FIGS. 6 to 10, inclusive, a player **30** may be addressing the golf ball **32** with a golf club **34**, all as indicated in FIG. 6 of the drawings. At this time, the metallic ball **22** is in the longer end portion **26** (then the lower end) of the tubular member **20**. As the golfer **30** makes his back swing in moving the golf club **34** and head **36** thereof from the position shown in FIG. 6 of the drawings to the position shown in FIG. 8 and through the position shown in FIG. 7 thereof, the metallic ball **22** will remain in the same end portion **26** of the tubular member **20** by reason of the centrifugal force involved even though said longer end portion **26** moves through a position where it is upward instead of downward. The position shown in FIG. 7 is a position which should not be assumed as a stop position by a golfer (when swinging a "wood" club) but

is a position through which the golfer moves in the continuous swing from the position shown in FIG. 6 to that shown in FIG. 8. However, if a golfer should stop or pause at the top of the back swing or in the position shown in FIG. 7, the metal ball **22** will drop from the longer end portion **26** to the shorter end portion **28** of the tubular member **20** and the ball **22** will contact an end portion **24** of the tubular member **20** with a resulting sound and vibration. Thus, indicating the flaw in technique (when swinging a "wood" club) by sound and vibration which may be sensed by the golfer.

It is highly desirable that there be a pause between the finish or end of the back stroke and the start of the down stroke. The design of my device has this pause or delay built in. Centrifugal force holds the ball **22** in position as shown in FIG. 7 until the wrist action, in moving to the position shown in FIG. 8, causes ball **22** to move to position shown in FIG. 8, at which time there is the signal heard and felt by the golfer. The signal occurs at the end of the pause that started at the moment of wrist cocking and this very small moment of time elapse indicates the time to start the down swing by the golfer.

A golfer may wear my device and practice a swing under the supervision of a golf pro and thus become acquainted with the signal sequences occurring in relation to his supervised positions during swinging of the golf club. Then when the golfer is swinging the golf club and the pro is not present, any variations from the signal occurrence sequence during supervised practice will serve as a basis for correction of the golfer's stroke.

As the golfer **30** swings the club **34** from the position of FIG. 8 to and through the position shown in FIG. 9, metallic ball **22** will first move outwardly and into the longer end portion **26** of the tubular member **20** and stay there through the influence of centrifugal force. Thus, the ball **22** is shown in the longer end portion **26** in FIG. 9. Upon completion of the follow through to the position shown in FIG. 10 and after reaching such position, the ball **22** will fall by gravity to the shorter end portion **28** as shown in FIG. 10 of the drawings and the completed follow through metallic signal will be heard and felt by the golfer.

While the foregoing description has been made in connection with the illustration of golf club "woods," the pertinency to golf club "irons" will be readily understood by golfers. Most golfers use a full swing with "wood" clubs in the sense of a full back swing (e.g., to the position shown in FIG. 8) and a full down swing and follow through (e.g., to the position shown in FIG. 10). When the distance to the "cup" is such that less "club" and less swing is called for, then the golfer will use an "iron" of desired pitch and he will use an abbreviated back swing and follow through. Thus, as long as the extent of the back swing is sufficient to move the longer end portion of the tubular member **20** higher than the shorter end portion **28** (a position in part illustrated by FIG. 7), then with a pause before the downstroke, the ball **22** will fall by gravity and the pause will be indicated. Regardless of the type of golf club ("wood" or "iron"), it is my experience, and that of pros with whom I have conferred, that there should be a pause at the top or end of the back swing and before starting the downswing of a golf club. This is true even in connection with a "putter." Thus, with my device being employed and if the back swing is at least to the extent of raising the longer end portion **26** of the tubular member **20** higher than the shorter end portion **28**, the ball **22** will fall (either upon the breaking of the wrists as in FIG. 8 or by gravity as in FIG. 7) to the end portion **28** and the golfer will sense such falling and the pause by feeling or hearing.

From the foregoing it will now be obvious that I have provided a golf stroke timing aid comprising a tubular member **20** having an internal longitudinal passageway extending from end to end thereof. Within said passage-

way a spherical ball **22** is disposed and is of a diameter to travel from end to end of said passageway in said tubular member **20**. Next, a cup-shaped mounting means **16** is provided and the closed end thereof is rigidly secured to said tubular member **20**, as by adhesives, welding, soldering, or the like. The tubular member **20** is preferably formed of two pieces and with the seam or joint **21** aligned to be intermediate the cup-shaped mounting means **16**. Thus, the securing of the mounting means to the parts of the tubular member **20** also secures such parts together. The open end portion of said cup-shaped mounting means **16** is adapted to contact the wrist of a golfer **30**. Conventional wrist strap means **14** is provided to mount the device on the wrist of a golfer and engage the cup-shaped mounting means **16** to extend the tubular member **20** at right angles to said strap means **14** and with the tubular member **20** extending longitudinally of the wrist **12** of a golfer and toward his hand.

Further, the said tubular member **20** is connected with said cup-shaped mounting means **16** at an area longitudinally offset relative to the center of its length and thus providing a greater length of tubular member on one side of said cup-shaped mounting means **16** over the length on the other side thereof, that is, the end portion **26** is longer than the other end portion **28** of the tubular member **20**.

Also, the tubular member **20** extends at right angles to the strap **14**. Thus, the tubular member **20** may be carried by the wrist of a golfer and aligned longitudinally thereof and with the longer portion or end portion **26** extending in the direction of the fingers of the hand of the golfer.

Also, the tubular member **20** is preferably metallic and has end portions which are substantially half spheres and the central inner portions of each are flattened or indented to provide inner, metallic end portions **24**. Such inner, metallic end portions **24** alone will be contacted by the metal ball **22** in traveling to an end of the tubular member **20**. The said metallic tubular member **20** is mounted by the cup-shaped mounting means, which is also preferably metallic, and with the open portion thereof adapted to contact a wrist of the wearer. This construction provides for an apparently enhanced audible signal as well as vibrating signal, thus permitting the sensing of the impact of the ball **22** with an end portion **24** of the tubular member **20** by feel and/or hearing.

Obviously, changes may be made in the forms, dimensions, and arrangements of the parts of my invention without departing from the principle thereof, the above setting forth only a preferred form of embodiment of my invention.

I claim:

1. A golf stroke timing aid comprising a tubular member, having an internal longitudinal passageway extending from end to end thereof; a spherical ball disposed in said passageway and of a diameter to travel from end to end of said passageway; a cup-shaped mounting means having the closed end portion thereof rigidly secured to said tubular member, the open end portion of said cup-shaped mounting means extending away from said tubular member and adapted to contact the wrist of a golfer; wrist strap connecting means carried by said cup-shaped mounting means for engaging a wrist strap extending at right angles to the longitudinal axis of said tubular member; and wrist strap means connected with said wrist strap connecting means, said wrist strap means adapted to encircle the wrist of a golfer.

2. The combination of claim **1**, wherein said tubular member is connected with said cup-shaped mounting means at an area longitudinally offset relative to the center of its length, thus providing a greater length of said tubular member on one side of said cup-shaped mounting means over the other side and in a direction at right angles to said wrist strap means, whereby said tubular member may be carried by the wrist of a golfer and aligned longitudinally thereof.

3. The combination of claim **1** wherein said tubular member is metallic, has metallic end portions which are substantially half spheres with the central portions thereof inwardly indented ensuring contact therewith by said spherical ball at each end of its travel; and said ball and said cup-shaped mounting means are metallic.

4. The combination of claim **1**, wherein said tubular member is formed of two parts and the seam between the two parts is adhered together and the cup-shaped mounting means is secured to said tubular member at the area of said seam and to both of said parts thereof.

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