

device, and therefore do nothing to aid the golfer to set up correctly in terms of the complete address position. Moreover, the prior art training devices do not seem to be specifically designed to help the golfer perform a proper one-piece take-away, nor assist the golfer to conceptualize the one piece take-away movement.

By contrast, embodiments of the present invention facilitate the correct body positioning relative to the golf club during the address position and during the golf swing take-away. The invention is based, at least in part, on present inventor's discovery that upon addressing the ball and during the take-away, professional golfers have a predictable and consistent angle between the centerline (in the elbow-to-wrist direction) of the leading forearm and the shaft of the golf club for most of their golf shots. This specification uses the symbol β to refer to that angle, which is herein referred to as the shaft-to-forearm angle. The present inventor has determined that the above-mentioned shaft-to-forearm angle β used by golf professionals for most of their shots is substantially 145 to 160 degrees. This specification uses the symbol β_{opt} to refer to any angle substantially within this range.

Based on this discovery, training devices embodying the principles of the invention provide feedback to the golfer in the form of a human-perceptible stimulus when a predetermined shaft-to-forearm angle is adopted during address and take-away, thereby helping the golfer to conform his swing to a predictable and consistent shaft-to-forearm angle from one shot to the next. The value of the shaft-to-forearm angle desired by the learning golfer will typically be the angle β_{opt} as just defined.

The illustrative training devices shown herein are in the form of a device that is held in place on the golf club, either by a physical device such as a clamp, or by the implementation of the present inventor's discovery that the present golf training aid, as well as possibly other golf training aids, can be held securely in place on a golf club primarily by hand pressure of the golfer upon gripping the golf club. The training device is so configured that upon its being put held in contact with a particular portion of the golf club—illustratively the golf club grip—a portion of the training device—illustratively a free end—contacts the underside of at least one of the forearms of the golfer upon the golfer achieving a desired shaft-to-forearm angle. In particular embodiments, the contact area is the golfer's leading forearm (i.e., the left forearm for a right-hand-swinging golfer, and vice versa). The contact with the golfer's forearm(s) provides a tactile sensation indicating that the golfer has, in fact, achieved the desired shaft-to-forearm angle. If the shaft-to-forearm angle were less than the desired amount, the training device would not contact the golfer's forearm, prompting him to increase the angle. If the shaft-to-forearm angle is greater than the desired amount, the training device will be exerting higher pressure on to, or digging in to the golfer's forearm, prompting him to decrease the angle.

It is generally recognized within the sport that the angular orientation between the longitudinal shaft axis to longitudinal spine axis as viewed from the side—referred to herein as the “shaft-to-spine angle”—should be approximately 90 to 100 degrees. The present inventor has discovered that upon a golfer being caused to set the shaft-to-forearm angle to β_{opt} upon beginning to get into the address position with most any golf club, the golfer simply has to assume an address position with an athletic stance and the golfer's resulting spine-to-shaft angle in address will, in fact, be approximately 90 to 100 degrees, as desired. Thus the present training device helps the golfer achieve both a proper shaft-to-forearm angle and a proper shaft-to-spine angle at address. Having those angles be consistent for most of the clubs that a golfer swings, will

increase the chance of properly swinging the golf club and properly striking the golf ball, and will help the golfer to more easily make corrections and adjustments to other components of the golf swing.

Particular embodiments of the training device are such that shaft-to-forearm angle is fixed at β_{opt} . Other embodiments, however, may be adjustable in such a way as to allow the golfer to select a shaft-to-forearm angle that is different from β_{opt} and/or to select a particular desired contact location on the leading or trailing forearm. Such adjustability may be particularly useful for specialty shots such as a putting stroke and/or to adjust the training device to match, for example, the idiosyncrasies of the golfer's body. Embodiments having this adjustable feature may have markings, detents or other means that enables the golfer to readily set the shaft-to-forearm angle to β_{opt} should that be the golfer's selection.

As suggested above, there are at least two ways in which the training device may be held in fixed relation to the golf club when in use. One way is to clamp or otherwise secure the training device to the club so that that the device will remain attached to the club when the club is not being held by a golfer. However, in particular embodiments, the device may not actually attach to the club but, rather, may have an interface that can be placed up against the club, with the interface being configured in such a way that the device will not remain in contact with the club unless held in place by and under the golfer's hand(s) or by other means external to the device itself. There are a number of benefits to the latter approach, as described hereinbelow. This aspect of the present inventor's contribution is applicable to golf training aids other than those shown and described herein. This aspect of the invention, therefore, encompasses a golf training aid having an interface that holds the golf training aid in contact with a golf club primarily by hand pressure.

Particular embodiments of the training device may be foldable and/or collapsible so as to allow it to be put into a more compact configuration for storage or transport

A further aspect of the present invention is a method performed by a golfer in which a device is positioned in contact with a golf club wherein the device provides a human-perceptible stimulus to the golfer responsive to the shaft-to-forearm angle β between the centerline of a forearm of the golfer and the shaft of the golf club being a predetermined value.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of one embodiment of a training device implementing the present invention;

FIG. 1a is a section view of the device of FIG. 1;

FIG. 2 is a side perspective view of the training device showing the training device in place on a golf club;

FIG. 3 is a bottom perspective view of the training device and also showing the underside of the golfer's forearms;

FIG. 4 is a side perspective view of the device of FIG. 1 useful in defining a particular angle Ω ;

FIG. 5 is a top perspective view of the device of FIG. 1 useful in defining a particular angle α ;

FIG. 6 shows details of an illustrative implementation of the training-device-to-golf-club interface of the embodiment of FIG. 1 of the present invention illustrating the interface attachment means and inter-finger portion;

FIG. 7 is a side perspective view of the illustration in FIG. 6 rotated 90 degrees about the Y axis;