

[54] **GOLF CLUB SWING TRAINING DEVICE AND METHOD**

[76] Inventor: **John B. Trask, Jr.**, 31 Donelon Ave., New Orleans, La. 70123

[22] Filed: **Dec. 19, 1973**

[21] Appl. No.: **426,435**

[52] **U.S. Cl.**..... 273/186 A; 273/183 B; 116/28 A; 273/194 R; 116/120; 40/129 A; 273/189 R

[51] **Int. Cl.**²..... **A63B 69/36**

[58] **Field of Search**..... 46/124, 152, 228; 273/81.3, 183, 186, 188, 162 E, 162 F, 162 R; 40/139, 138, 145 A; 116/120, 28 A, 114 D; 138/131, 134

[56]

References Cited

UNITED STATES PATENTS

932.988	8/1909	Larson	40/138 X
1,446.835	2/1923	Cook	46/115
1,727.700	9/1929	Dickson	46/124
2,204.974	6/1940	Strasser.....	273/81.3
2,482.630	9/1949	Mastromarino.....	116/28 A X
3,101,209	8/1963	Jorgenson.....	138/134 X
3,443,811	5/1969	Brooks	273/183 B

3,494,058	2/1970	Paquette	40/139
3,698,720	10/1972	Gudmundsen	273/162 E
3,729,199	4/1973	Granberg	273/183 B

Primary Examiner—George J. Marlo

Attorney, Agent, or Firm—Rogers, Ezell & Eilers

[57] **ABSTRACT**

A flexible, shapeable extension or feeler attachable to extend from the end of the handle of a golf or other club used to strike a ball or like projectile is positionable to cause it to barely miss contact with the left forearm of a user in addressing the ball. On the backswing, the long feeler can contact the arm if the wrists are broken excessively. At the point of ball impact, the end of the feeler will contact the arm only if hands are not properly ahead of the club and such contact tells the user he has swung improperly. On follow-through, the feeler will contact the arm only if there is not proper wrist pronation and again the contact will advise the user. Electrical sensory signal members may be incorporated. The device is also useful in similar fashion with clubs, bats, or rackets other than golf clubs.

13 Claims, 18 Drawing Figures

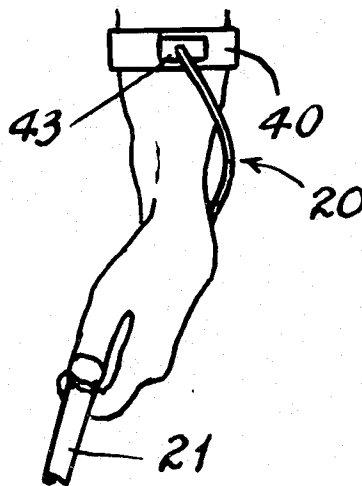


Fig. 1.

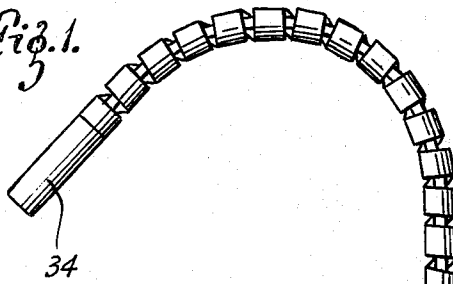
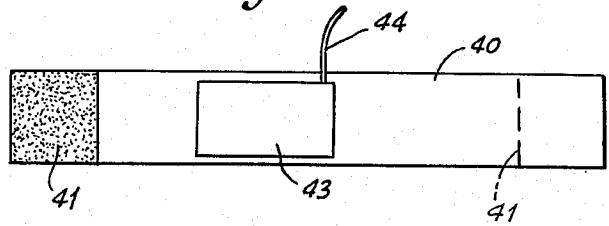


Fig. 17.



20

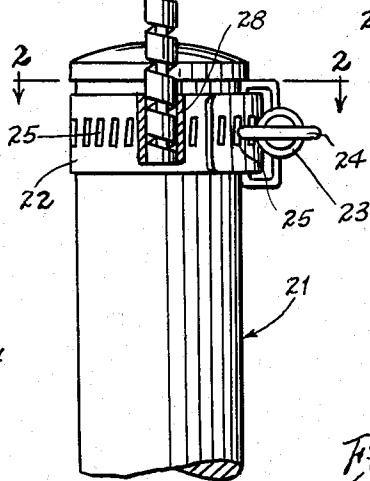


Fig. 18.

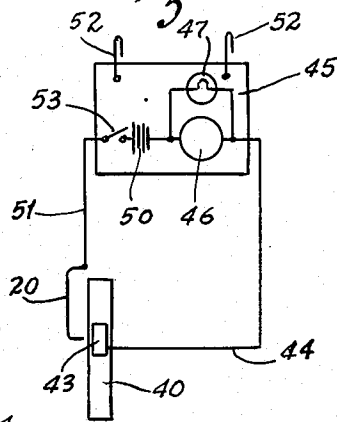


Fig. 2.

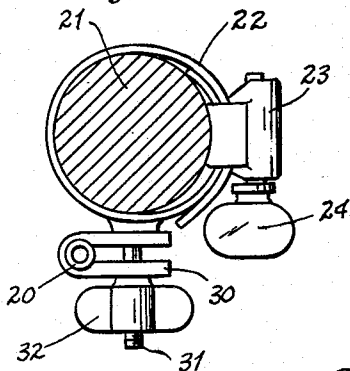


Fig. 7.

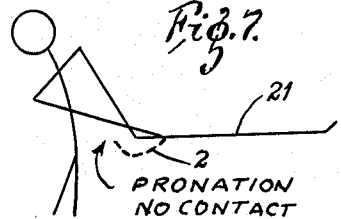
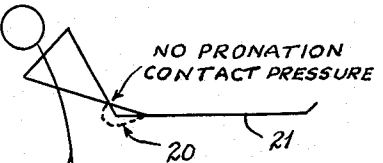


Fig. 8.



NO CONTACT
WRISTS FIRM

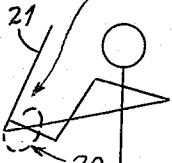


Fig. 4.

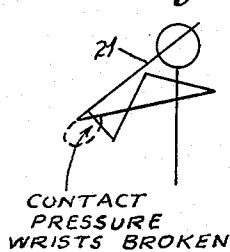


Fig. 5.

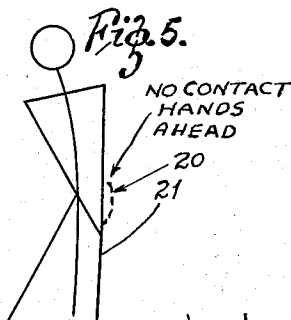


Fig. 6.

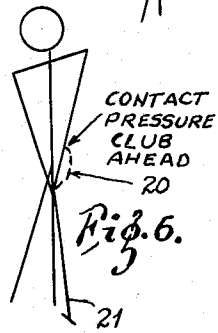


Fig. 9.

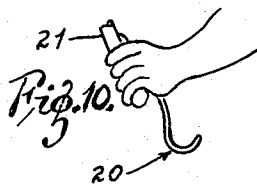
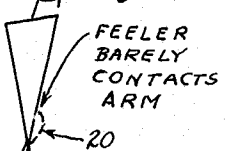


Fig. 11.

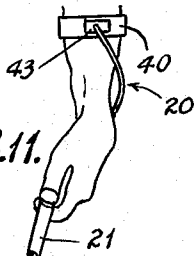


Fig. 12.

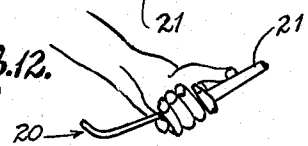


Fig. 13.

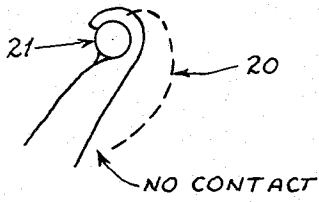


Fig. 14.

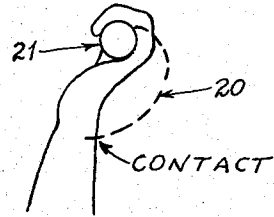


Fig. 15.

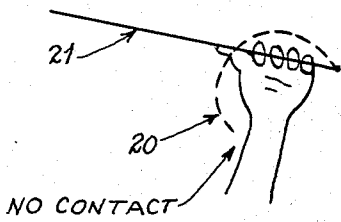
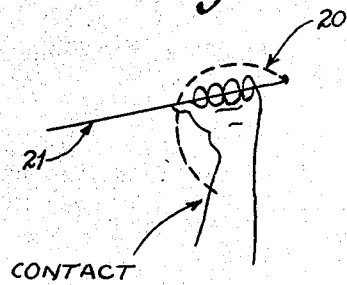


Fig. 16.



GOLF CLUB SWING TRAINING DEVICE AND METHOD

BACKGROUND OF THE INVENTION

Prior art has produced devices to aid golfers or other sportsmen to have a proper swing of the batting instrument, including means to warn a golfer when his head moves improperly or when his wrists improperly break. Some of these rely upon contact pressure or sensory signal producing means. Characteristic of such devices is Harrison U.S. Pat. No. 2,064,603 which has a feeler element secured around the wrist of the player arranged to produce sound signals when the wrists of the golfer are improperly flexed. Other devices have actual restraining means attachable to the arms of the player.

It is an object of the present invention to provide a device attachable to a golf club or other bat or racket which can cause a sensory reaction to the user in the event his swing is improper, in one or more of the backswing, the ball impact, or the follow-through phases. More particularly, it is an object to provide such a device that is adjustably pre-settable to work with any size person. A specific object is to provide a device of this kind which embodies a flexible, positionable extension that can be attached to a golf club to lie alongside the player's forearm and to produce contact with the forearm of the wearer only when the wrists are improperly broken on a backswing. A similar object is to provide such a device which produces contact only when the arms have an improper relationship to the club at point of impact with the ball. Another object is to provide such a device that provides contact unless there is a proper pronation of the wrists of the player on follow-through.

Other objects are to provide such a device which can be readily attached to a club and readily adjusted on the club. Also it is not excessively large or heavy and can be counter-balanced. Another object is to provide such a device that can be incorporated with an electrical means carried by the user to produce a sensory signal, either audible or visual or both, when an improper swing is made.

Specifically, it is an object to provide a device of this kind particularly usable in connection with the golf club which produces contact with the forearm of the wearer in the event of an improper swing, thereby signalling the condition, and which device does not contact the forearm of the user when the swing is proper.

IN THE DRAWINGS

FIG. 1 is an elevation partly in section of the device clamped on the handle of a golf club;

FIG. 2 is a section on the line 2—2 of FIG. 1 showing a modification of the clamping means;

FIGS. 3 through 9 are stick diagrams of the body and arm positions of golf swings, the present device being indicated by dashed lines, specifically:

FIG. 3 is a diagram of the way the present invention acts on a proper backswing;

FIG. 4 is a view similarly showing the condition with an improper backswing having excessive wrist break;

FIG. 5 is a view showing the position of the device with a proper point of impact relationship;

FIG. 6 is a diagram of the situation with an improper point of impact position;

FIG. 7 shows the condition of the device with proper pronation of the wrists on a follow-through;

FIG. 8 shows the contact condition with absence of pronation;

FIG. 9 shows the aligning position a player may take in addressing the ball for correct position of the feeler;

FIG. 10 is a sketch of the device showing the left arm properly positioned at the upper part of a backswing;

FIG. 11 is a sketch of the left arm properly positioned at the approximate point of contact, the electrical signal device being attached to his arm;

FIG. 12 is a view of the left forearm at follow-through with proper pronation;

FIGS. 13 and 14 are views showing the effect of properly held wrists in the backswing (FIG. 13) and backwardly rolled wrists (FIG. 14);

FIGS. 15 and 16 are views of proper wrist and finger grip during backswing (FIG. 15) and the effect of broken wrists (FIG. 16);

FIG. 17 is a view of a wrist wrap for an electrical signalling device; and

FIG. 18 is a wiring diagram of such an electrical device.

DESCRIPTION OF A PREFERRED EMBODIMENT

The invention will be described in connection with a golf club, although it can be used for other games wherein a club or bat is used to hit a projectile or ball.

Essentially the device comprises a flexible feeler 20, attachable to the handle of a golf club 21. An appropriate adjustable band 22 is used to attach this device releasably to the club 21. In the present case, this is shown as being a strap of the hose clamp type with a worm wheel adjustment device 23 having a wing-nut 24 by which it may be turned, the worm wheel engaging in the slots 25 to loosen or tighten the strap 22, in the known manner.

As shown in FIG. 1, the feeler 20 may be attached directly to the strap as by a ferrule 28 secured directly to the strap and to the end of the feeler. However, in the preferred construction illustrated in FIG. 2, the feeler 20 is embraced between the jaws of a clamp 30 that can be tightened by a screw 31 and a wing nut 32, the screw 31 being attached to the strap 22. The feeler may be permanently attached, as by solder or welding, to the clamp. The advantage of this arrangement is that the clamp 30 is swivelled on the screw 31 so that when the wing nut 32 is loosened, the feeler may be swung about the axis of the screw 31 and then secured in adjusted position by tightening the wing nut 32. This is particularly useful where the feeler 20 is rigid and not bendable.

In the preferred form, the feeler 20 is made up of metal spiral that is wrapped in a loose coil around an inner reinforcing wire. It can be readily shaped to extend in a desired direction or combination of directions but will stay in its adjusted shape with resistance against unintended distortion therefrom. Preferably it has an end tip 34 on it.

While this feeler 20 has been described in its preferred form of being flexible, it may be made rigid for certain types of use or where it is to be used by one person.

The feeler device may be used in connection with an electrical signalling means. In this event there is a strap 40 that can be wrapped around the wrist of the user. The ends of the strap may have Velcro fasteners 41 so

that the strap can be securely attached around the forearm of any user, with adjustable snugness. The strap is of nonconductive fiber material. It has on its surface a conducting sheet 43 which is to be on the outside of the wrist when this device is used.

The conductive sheet 43 has a very flexible wire 44 leading from it to a base 45. This base or pad 45 can have signal devices and a small dry cell battery mounted on it. In this present case, a buzzer 46 and a light 47 have been illustrated as connected in parallel to one end of a battery 50. The other end of the battery is connected by a light wire 51 to the end of the feeler 20 which is of conductive metal. Hooks 52 are attached to the pad 45 to enable the assembly to be hung onto the belt or waist band of the user.

USE OF THE DEVICE

The feeler device is initially assembled on the club by applying the strap 22 around the club and tightening the wing nut 24 until the strap is secure. In the preferred form of FIG. 2, the feeler 20 is extended generally coaxially with the club and the wing nut 32 tightened. The angle between the feeler and the club may be adjusted in the embodiment of FIG. 2. If the feeler is rigidly secured to the strap, this last adjustment is made unnecessary, and the positioning of the feeler extension must be made by shaping the feeler 20. The swivel clamp is especially important with an inflexible feeler 20.

The user then grips the club with his left hand (assuming he is a right-handed golfer). He closes his right eye and looks along the left forearm and golf shaft, as diagrammatically illustrated in FIG. 9. In addressing the ball with the club flat on the ground adjacent the ball and with the ball approximately out from the left toe, the left forearm should be approximately in line with the golf club shaft. In this position (See FIG. 5), the hands are ahead of the club head.

With this alignment of the club, the player with his right hand bends the flexible tubing so that it comes around his left wrist and forearm approximately to the position indicated in FIG. 10. It should be just out of contact with his forearm. Usually the attachment point of the feeler to the strap is about at the bottom side of the club, from which point the feeler extends up the arm, then bends around the outside of the arm, to bring its outer or free end portion adjacent the outer forearm of the wearer. If the feeler is formed of rigid tubing or rod, the positioning is produced by a combination of turning the whole strap 22 about the axis of the golf club and by turning the clamp 30 about the axis of the screw 31 as heretofore explained.

The feeler may be relatively shorter or longer. In the event of the shorter feeler 20, it simply comes up to contact with the outer part of the forearm a bit above the wristwatch position. If a longer type feeler is used as is suggested in FIGS. 3 and 4, the feeler may cross over the forearm just out of contact with the forearm and hook in beyond the inner side of the forearm. It should be out of contact with the arm at all points. The feeler positioned this way retains its position and shape, since the tubing is relatively stiff, when shaped, or is actually rigid.

Three positions of the feeler in use are considered in the drawings. In FIGS. 3 and 4, diagrammatically representing a user facing the reader, the conditions of the backswing near the top, where the wrists are normal

(FIG. 3) and are broken excessively (FIG. 4) are illustrated. For purposes of clarity, the backswing in these illustrations is not made as high as a normal backswing. As shown in FIG. 3, where the extended feeler 20 is shown in dashed lines, with proper wrist position, absent excessive wrist break, the feeler is clear of the left forearm. However, if the wrists are excessively broken as shown in FIG. 4, the free end of the feeler 20 is pulled toward and into contact with the left forearm. The player is immediately conscious of this contact and can correct it by straightening his wrists.

On the downswing, the tendency of poor golfers is to force the hands through ahead of the hips and shoulders, whereas in a proper swing the hands go through to slightly beyond alignment of the body with the ball. FIG. 5 shows the proper swing at point of impact, and it will be seen that the feeler 20 is not in contact with the forearm. However, in FIG. 6, an improper swing is shown where the club head has been forced through ahead of the hands. This swivels the feeler 20 toward and into contact with the forearm. It will be remembered that at the start, the feeler was placed barely out of contact with the forearm when there was substantial alignment of the forearm and the club shaft. Consequently, it can be seen by comparing FIGS. 5 and 6 that when the club shaft is now more aligned with the body axis, the feeler has been swivelled until it produces contact pressure on the forearm. The player is thus immediately advised that he has made an improper swing.

In FIGS. 7 and 8 the use of the feeler to indicate whether proper pronation of the wrist has been made is illustrated. This twisting, or pronation, of the wrists requires the right wrist to be twisted over the left. It should begin approximately at the time of, or slightly after, impact of the club head with the ball.

In FIG. 7 the wrists have been pronated and as is evident, this has twisted the feeler 20 around so that there is a substantial distance between it and the left forearm of the player. However, in FIG. 8, where there has been no pronation of the wrists, the feeler 20 is again in pressure contact with the forearm of the player, warning him that he has failed to perform the pronation. The proper condition is also illustrated in FIG. 11 which shows a view facing a player's left hand when proper pronation has been effected.

The feeler may be set for sensing improper wrist action at maximum backswing. In such case it is curved somewhat around the left wrist, as shown in FIGS. 13 and 15, so that at full backswing, it is nearly in contact with the inner side of the forearm. If the wrists are not broken, or the fingers loosened, the feeler will not contact. But if the wrists are broken down against the thumb, or the fingers loosened, the result will be as in FIG. 14, with contact. Or if the wrists are rolled backward, contact results as in FIG. 16.

Thus the feeler may, with only easy trials, be positioned to detect many different flaws in the player's swing. And if it is so positioned as to detect by contact some particular flaw, and in being so set produces contact at some other part of the swing, the swing will not be significantly disturbed by such contact, as the feeler will yield readily enough to avoid interference. In fact, it is somewhat resilient, so as to return to a preset position and shape, and resistingly pliable so that it can be shaped by hand and yet will retain that shape or return to it upon mild deformation as by the contact mentioned.

As stated above, the device can be used with an electrical means to produce a sensory signal, audible or visual or both. In this case, the pad 45 with the signal devices and small battery, is hooked over the waist of the wearer, out of the way of his arms. The fine and flexible wires 44 and 51 are connected to the conductive sheet 43 and to the feeler 20, respectively. Preferably, these wires are led to the shoulder of the user and down his arm.

When the switch 53 is closed, the player proceeds to set the device as before. Whenever the feeler 20 contacts the sheet 43, a circuit is completed to the sensory signals 46 and 47 and a noise occurs and a light comes on, one or both.

When this is used, these signals will be produced at each of the points of improper swing. The flexible conductor sheet 43 is large enough to be contacted by the feeler (which is formed of or with an electrical conductor) in each of the positions of error, in FIGS. 4, 6 and 8. The user will be signalled at what point the mistake was made.

Thus this device can aid in correcting the main causes of improper swinging. In the case of golfers, one of the worst tendencies is to bring the club head to strike the ball before the hands are past the imaginary vertical plane dissecting the ball. Since the downswing and follow-through occur in so short a period of time, it is difficult for the golfer to determine when and whether his hands or the golf club head have first passed the critical plane. Yet with the present device, he is given a sensory warning in the event his swing is improper in this respect. The same may be said for the other two swing errors, namely, overbreaking of the wrists at the backswing, and failure to pronate the wrists at the time of impact and follow-through.

Even if he fails to pronate his wrists, he should feel the golf club head strike the ball before he feels the feeler contact his forearm, but the optimum swing and distance occur when the feeler never touches his forearm at any time during the swing.

When the rigid feeler is used, it will tend to force the user to pronate his wrists as it will be uncomfortable for him to permit the rigid feeler to press against his forearm.

The operation has been described in connection with the use of the clubs for distance shots. However, the device is equally useful for short chip shots and even for putting. While there may be less of a tendency to break the wrists on the backswing in the shorter shots, nevertheless there remains the tendency to have the club head come through too soon with respect to the hands and this will be noticed when the present device is used in connection with short shots or putts.

While this device has been explained in connection with playing golf, it is also useful in connection with other clubs or bats, such as tennis rackets and baseball bats. An analysis of the strokes in both of those sports as well as in other such games will demonstrate the position of the feeler to be set. For example, in the forehand drive in tennis, the wrists should be kept stiff. If this device is set so that any bending of the wrists will bring the feeler in contact with the user's forearm, it will then warn him of the error if he should bend his wrists.

It will be observed that this invention provides a device which is light in weight and not cumbersome so that it can be easily attached to the golf club or other

sporting device. Particularly, in the case of golf, the manufacturer can provide a selection of clubs with their swing weights and total weights adjusted so that this device is compensated for when it is attached. A golfer can swing these clubs and easily determine which club produces the best results for him.

The device can be used by any person, male or female, left-handed or right-handed, since it is adjustable to any size. It is preferred to have it removable from the club so that the club can be used without it when the player has corrected his swing, but a club can be made with the feeler permanently attached to and extending from its handle.

In learning to use this device, the player can practice swings very slowly because the device itself will indicate whether his swing is proper. In fact, this can be done whether or not he is on a golf course and whether or not he has a golf ball.

Various changes and modifications may be made within this invention as will be readily apparent to those skilled in the art. Such changes and modifications are within the scope and teaching of this invention as defined by the claims appended hereto.

What is claimed is:

1. In a club swinging feeler device adapted to be attached to a golf club, which club is to be gripped in the hands of the user, with his hand overlying the club handle: sensate signal producing means, including an elongated feeler and means for attaching it to the club handle adjacent the hand grip, so that it can extend adjacent the arm of the user; the feeler being connected onto the attaching means, and the device having a shape and length to extend the feeler from the attaching means at the back side of the forearm of the user to lie adjacent the front side of the forearm of the user and to be in close relation but out of contact thereto when the user's wrists are held at a proper angle with respect to the club for a given position of swinging the club, the device providing a structure sufficiently rigid that it can maintain such predetermined shape during the swinging of the club in a normal swing, and so that if the user's wrists become positioned at an improper angle with respect to the club, the forearm will contact the feeler and produce a sensate signal.

2. In the feeler device of claim 1: the free end of the feeler away from the attaching means being bent forwardly from the attaching means and then across the forearm whereby the free end portion may be contacted by the forearm upon the aforesaid improper club swinging movement.

3. In the feeler device of claim 2: the feeler being bent for extending across the front of the forearm and then backward at its free end portion so that it may hook onto the inside of the forearm, the free end portion being bent to a position wherein it can contact the inside of the user's forearm as upon excessive wrist break on a backswing.

4. In the feeler device of claim 2: the feeler being flexible to enable it to be shaped by intentional bending, but relatively firm when shaped so that it will retain the shape to which it is bent unless directly impinged upon.

5. In the feeler device of claim 4: the feeler comprising a helically coiled sheath surrounding a wire core.

6. In the feeler device of claim 1: the means to secure the feeler to the club being a removable clip having re-

leasable means for attachment or removal of the device.

7. In the feeler device of claim 6: the removable clip comprising a band engageable around a club handle, and the releasable means comprising a device to shorten or lengthen the band.

8. In the feeler device of claim 1: the means to secure the feeler to the club comprising a releasable clamp swivelly attachable to the club, and means to secure it in a desired swivelled position, the feeler being attached to and extending from the clamp so as to be pivotally positionable on the club.

9. In the device of claim 1: an electrical conductor means for mounting on the forearm of the user, having an exposed conductor; means comprising a battery-operated sensing signal, for connecting the signal to a battery, and to the exposed conductor and to the feeler, the feeler being electrically conductive, so that the sensory signal may be operated when the conductor is mounted on the forearm at the point where the feeler contacts on an improper swing.

10. In the device of claim 9: the conductor means

comprising a band and securing means for attaching it around the forearm, and the conductor comprising a conductive sheet of material secured to the band.

11. A method to improve a swing of an athletic club such as a golf club at a ball or like projectile comprising: providing a feeler extending outwardly beyond the end of the club, to lie adjacent the forearm of the user, positioning it to lie adjacent but out of contact with the outside of the forearm of the user when the wrists of the user are in proper angular relation to his leading forearm, but which will engage his forearm when he swings the club with an improper wrist position.

12. In the method of claim 11: positioning the feeler so that it is pivoted out of contact with the user's forearm only when his wrists come to point of impact ahead of the club head.

13. In the method of claim 11: positioning the feeler so that it is pivoted out of contact with the user's forearm at the follow-through part of the stroke only if he pronates his wrists.

* * * * *

25

30

35

40

45

50

55

60

65