Nov. 14, 1967 E. A. LARSEN 3,352,559

GOLF SWING TRAINING DEVICE

Filed July 20, 1964 3 Sheets-Sheet 1

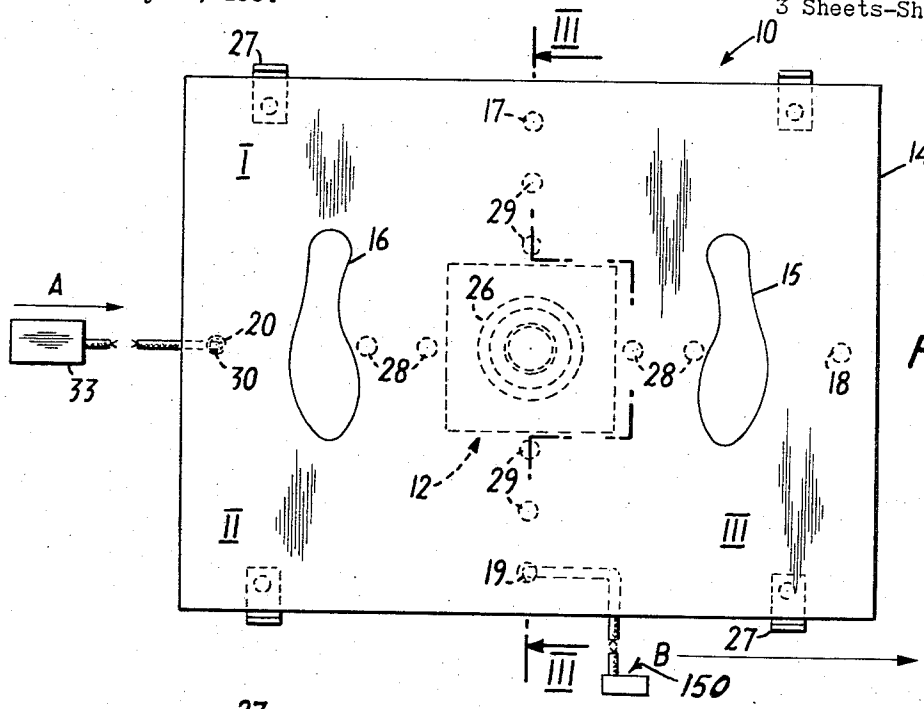


FIG. 1

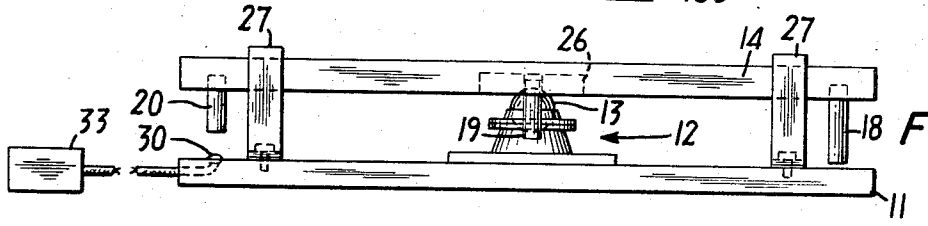


FIG. 2

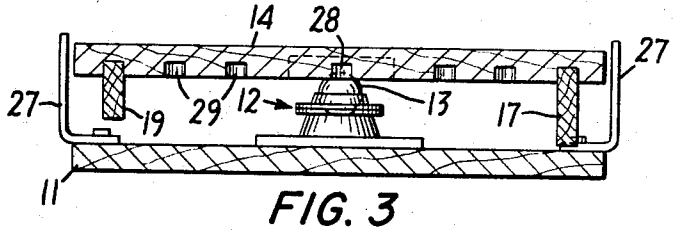


FIG. 3

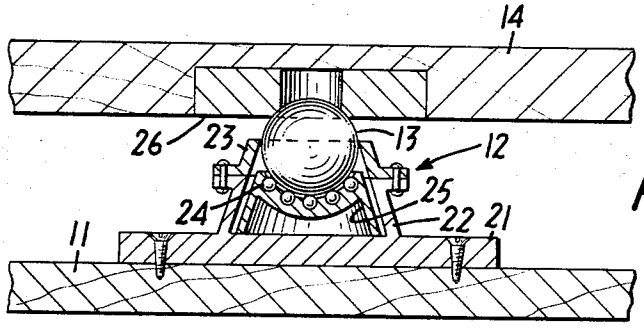


FIG. 4

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GOLF SWING TRAINING DEVICE

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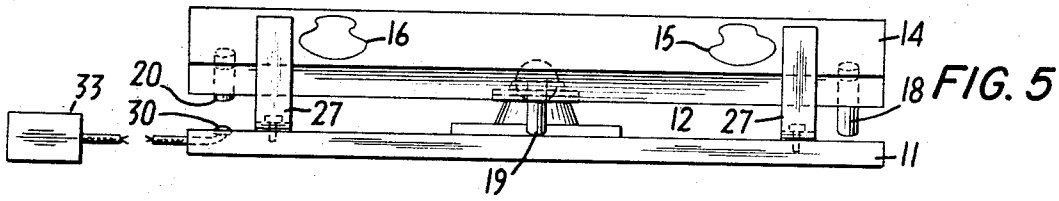


FIG. 5

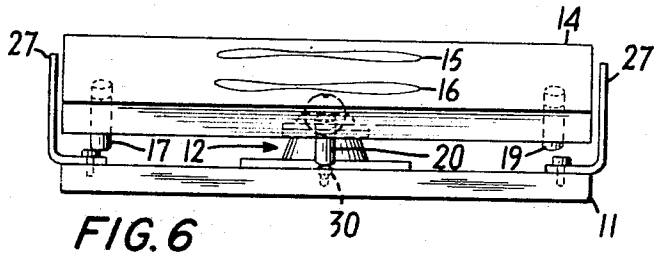


FIG. 6

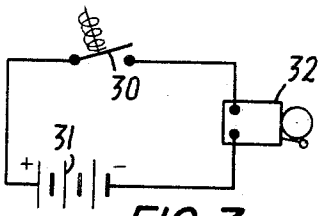


FIG. 7

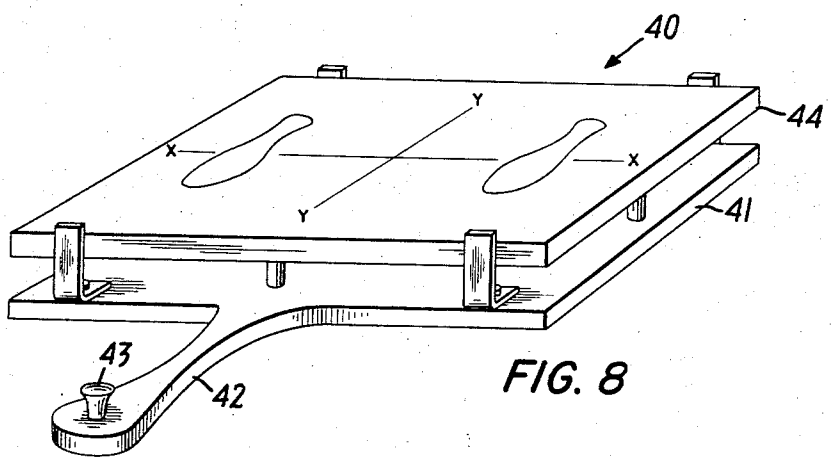
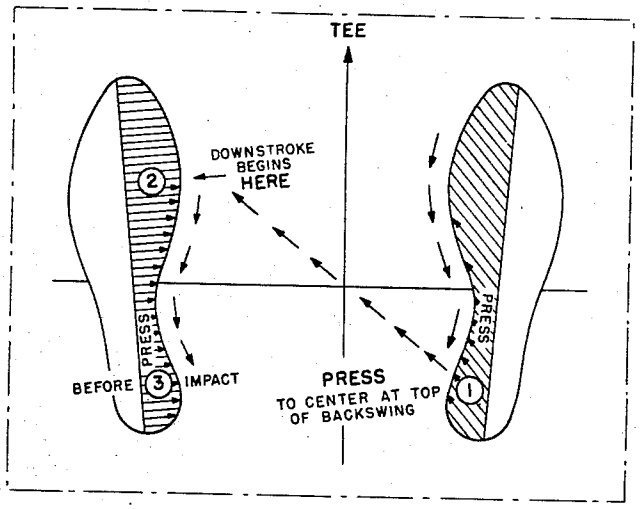


FIG. 8

FIG. 9



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GOLF SWING TRAINING DEVICE

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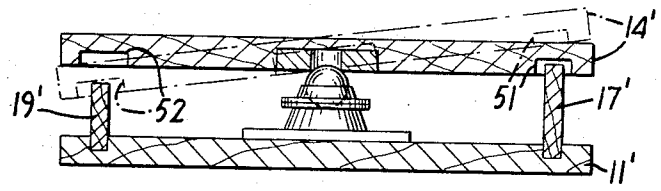


FIG. 10

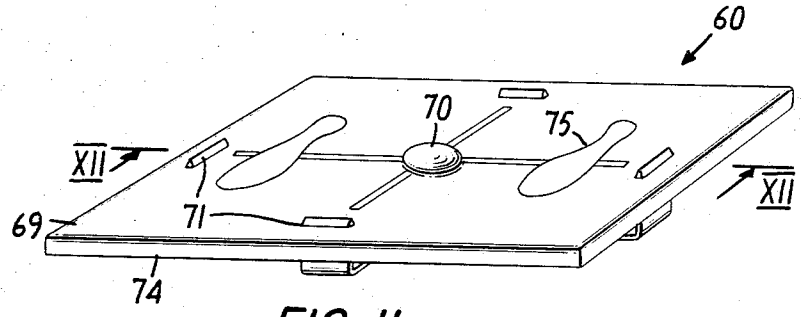


FIG. 11

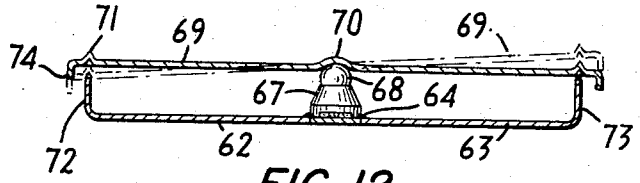


FIG. 12

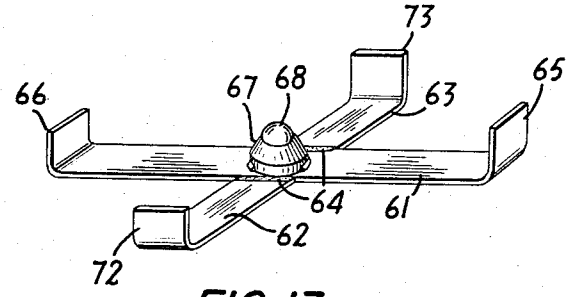


FIG. 13

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3,352,559

GOLF SWING TRAINING DEVICE

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Filed July 20, 1964, Ser. No. 383,701
4 Claims. (Cl. 273—187)

This invention relates to a golfer's aid and refers more particularly to a device for aiding a golfer in developing proper balance and rhythm or coordinated body movement when stroking.

In order for a golfer to strike a golf ball in the most effective manner, it is essential that he employ proper body balance throughout the entire stroke. Stated simply, body balance means the correct disposition of body weight at various points of the swing. Contrary to general belief, the golf swing is not made up of a series of separate body motions on the part of the golfer. Rather, it is a single, continuous, coordinated body motion made from a balanced position. Feet, legs, hips, arms and hands must all be employed by the golfer in proper sequence from a balanced position to strike the golf ball with force and accuracy. Thus, while stance, grip, backswing, hip action, foot control and hand and wrist action are components of a composite, the key to coordinating all these efforts is the ability of the golfer to keep his body weight properly disposed throughout the entire stroke. In order for many golfers to learn and develop a proper golf stroke, it is generally required that they receive instructions from a coach or "pro." But even with instructions most player improve only slowly since the stroke is generally taught as a series of separate body motions, the golfer following the oral instructions of the coach. Furthermore, different coaches emphasize different motions as being more or less important to the swing, so that the golfer can easily become confused as to the strong points and weaknesses in his stroke. While most coaches can generally detect errors in the golfer's head positioning, hands, elbows, hips, etc., it is most difficult to detect improper balance. In order to overcome some of the above-mentioned difficulties, some prior art golfing aids have been developed. However, all of those prior art devices for developing the golf stroke function on the theory of developing one part of the swing only, as for example, the hip motion while as stated above, what the golfer really needs is a device which will enable him to observe, develop and improve his body balance and rhythm as he strokes.

It is, therefore, the primary objective of the present invention to provide a device which in use enables a golfer to develop and observe his body balance while stroking.

Another object is to provide a golfer's aid for aiding a golfer in developing proper body balance which in use is responsive to the slightest deviation from proper balance so that the golfer is immediately appraised of his defect.

Another object is to provide a golfer's aid for aiding a golfer in developing and improving his stroke.

Still another object is to provide a golfer's aid which when used properly by the golfer, enables him to properly coordinate his body balance and motion as a single, smooth, continuous rhythmic effort thereby achieving maximum effectiveness and effort in striking the golf ball.

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A further object is to provide a golfer's aid for aiding a golfer in developing proper body balance and a correct stroke which is simple and inexpensive in construction, adapted for indoor and outdoor use, and suited for developing a proper swing with both golfing woods and irons.

A still further object is to provide a golfer's aid which enables a golfer to develop proper body balance and rhythmic, coordinated body movement in a shorter time and at considerably less expense than heretofore possible when employing prior art training aids.

Other objects of the present invention will become apparent during the course of the following specification.

In achieving the aforementioned objectives of the present invention it was found advantageous to provide a golfer's aid which comprises a base, a pedestal mounted on the base and a swivel or rotatable support carried by the pedestal for supporting a footboard for tilting movement relative to the base. In use, the golfer stands on the footboard with the stance assumed when addressing the golf ball. If he sets himself properly, and equally distributes weight to both feet, the footboard will remain parallel with the base. Thereafter when the golfer takes his stroke, he shifts weight from the inside of both feet to the left heel, and if this shift is effected in the proper manner, the footboard will not undergo any appreciable tilt at any time. On the other hand, if the golfer does not press down with the inside portions of his feet to maintain his balance, or if he does not shift his weight properly from the inside of both feet to the left heel, the footboard will tilt forwardly to indicate absence of pressure on the feet or it will tilt in the direction of the right foot to indicate that the weight was not properly taken off this foot during stroking. To prevent undue tilting of the footboard rearwardly or in the direction of the left foot, the footboard is provided with stops which bear against the base and maintain the footboard substantially parallel to the base whenever the golfer's balance is correct.

According to the invention, the footboard may be provided with means for actuating an audible or other signal whenever it is tilted in a manner indicating improper balance on the part of the golfer.

The invention will appear more clearly from the following detailed description when taken in conjunction with the accompanying drawings showing by way of example preferred embodiments of the inventive concept.

In the drawings:

FIGURE 1 is a plan view of a golfer's aid constructed in accordance with the principles of the present invention;

FIGURE 2 is a front elevation of FIGURE 1;

FIGURE 3 is a sectional view as taken along line III—III of FIGURE 1;

FIGURE 4 is a partial section in elevation of the rotatable support used for supporting the footboard on the base;

FIGURE 5 is the same as FIGURE 2 except the footboard is shown in a forwardly tilted position indicating that the golfer has not maintained proper pressure on his heels during stroking;

FIGURE 6 is an end elevational view looking in the direction of arrow A, FIGURE 1, and shows the tilting of the footboard in the direction of the right foot result-

ing from the failure of the golfer to shift his weight to the left foot properly during stroking;

FIGURE 7 is a wiring diagram of the audible signal circuit energized when the golfer does not use proper balance during stroking and tilts the footboard;

FIGURE 8 is a perspective view of another form of construction of the golfer's aid wherein the base is provided with an extension piece on which is mounted a golf tee; and

FIGURE 9 is a diagrammatic representation of the manner in which the golfer applies foot pressure to maintain proper balance during stroking.

FIGURE 10 is a sectional view of a different form of the golfer's aid as taken along a cutting plane passing through the transverse axis thereof, some parts being shown in full.

FIGURE 11 is a perspective view of still another form of the golfer's aid.

FIGURE 12 is a sectional view as taken along line XII—XII of FIGURE 11.

FIGURE 13 is a perspective view of the base member used in the construction shown in FIGURE 11.

Throughout the specification like reference numerals are used to indicate like parts.

Referring in detail to the construction shown in FIGURES 1 to 3, the golfer's aid **10** comprises a substantially flat, elongated base **11** on which is mounted a pedestal **12**, the pedestal carrying a universally rotatable ball **13** whereupon is supported elongated footboard **14**, the footboard having the same general outline as the base. As seen in FIGURE 1, the pedestal **12** is located substantially at the center of the base so that footboard **14** may be easily tilted in a number of directions if an unbalancing force is applied thereto by a golfer standing on the footboard. For assisting the golfer in assuming a correct stance when addressing the ball, the upper surface of footboard **14** is provided with footprint indicia **15** and **16**, representing, respectively, the left and right feet of the golfer. The indicia which may be of the decalomania type are located symmetrically on each side of the longitudinal axis of the footboard and are equispaced from its transverse axis.

When the golfer strokes, it is necessary that he exert foot pressure and keep his body weight on the heels and in the direction of flight of the golf ball (arrow B, FIGURE 1). If he does this and therefore maintains proper balance, the footboard **14** will remain substantially parallel with base **11** as the footboard is provided with a stop **17** to inhibit footboard tilt to the rear and a stop **18** inhibiting tilt in the direction of the line of flight. The stops **17** and **18** which may be pegs or dowels and are of equal lengths, extend downwardly from the footboard almost contacting the base **11** when the footboard is parallel therewith. If the golfer's balance is not properly maintained or he exerts pressure on the front of his feet or in a direction away from the line of flight, the footboard will tilt forwardly or in the direction of his right foot **16**, this tilt being sufficiently pronounced to immediately indicate a condition of incorrect balance and being checked only when stops **19** and **20** carried by the footboard **14** and being of lesser height (at least ½"–¾") than stops **17** and **18**, contact the base **11**.

As seen in FIGURES 1 and 3, the footboard **14** may be provided on its underside with a number of blind holes **28** arranged along its longitudinal axis for the purpose of relocating stops **18** and **20**. Similarly holes **29** may be arranged along the transverse axis for relocating stops **17** and **19**. The relocator holes thus permit relocation of the stops so that players of varying skill may set the stops to allow for a greater or lesser tilt.

As seen in FIGURE 4, pedestal **12** includes a flat lower portion **21** screwed to base **11**, and a frusto-conically shaped body **22** to which is fastened a retainer ring **23** for retaining universally rotatable ball **13**, the ball riding freely on the ball bearings **24** of a cup bearing **25**. Footboard **14** is provided with an annular ring insert **26** which rests on the universally rotatable ball **13** as shown thus providing for ready tilting of the footboard with respect to base **11** when an unbalancing force is applied thereto. In general, the footboard may be tilted in directions in three of the four quadrants (I–III, FIG. 1) formed by the intersecting longitudinal and transverse axes of the footboard. Tilt in the fourth quadrant is inhibited by stops **17** and **18**.

To obviate rotation of footboard **14** in a plane parallel to base **11**, angular retainer brackets **27** are connected at the front and rear of the base and extend upwardly a distance alongside the footboard as shown in FIGURES 1 and 2. The retainer brackets **27** do not however interfere with tilting of the footboard.

In operation:

In achieving the most effective stroke, the golfer must strive for proper body balance and rhythm. As used herein, "balance" means the ability to exert proper foot pressure and balance over the ball during all phases of the stroke by making proper use of the feet and legs. "Rhythm" means coordinating the various movements required in the golf swing into one continuous fluid motion without generating unnecessary or undue stress at any part of the stroke. In general, rhythm is developed by keeping the speed of back-swing and down-stroke substantially uniform. Any sudden or unrhythmic movement will tilt the footboard.

With the foregoing in mind, the golfer **10** mounts the footboard **14** generally placing his right foot on indicia **16** and the left foot on indicia **15** although these foot positions are merely recommended since the player may position his feet according to his size, preference and type of shot to be practiced. For the beginner, an additional right foot position (not shown) may be indicated at the center of the footboard to facilitate mounting and dismounting without causing undue tilting. In any event it is necessary for him to distribute his weight in such manner that the footboard **14** remains parallel to base **11**. The golfer's initial motion during the address and first part of the backswing, will be away from the line of flight and thus it will be necessary for him to distribute his weight equally along the inside of both feet and on the heels to keep the footboard from tilting. Only by exerting pressure downwardly along the inside of the left foot and an inward twisting pressure with the right heel as shown diagrammatically in FIGURE 9, can the golfer compensate for the shifting of weight and twisting of the hips to the right at the top of the backswing. To exert this pressure, the large muscles of both legs are used, the muscles being stretched in the manner of an elastic band away from the line of flight while the feet remain stationary. When released, these stretched muscles speed weight transfer to the left, enabling the golfer to make a smooth rhythmic transfer to the left allowing a free pendulum movement of the arms thereby increasing clubhead speed and automatically bringing full power of the right side behind the shot. It will be readily understood that it is essential for the golfer's full weight to be shifted onto the left foot well before impact and, therefore, the initial motion in the downswing must start in the feet and not in the hands. This is the critical phase of the stroke and if properly executed, a smooth rhythmic downswing follows naturally as contrasted with the forced motion inhering to a delayed weight shift. By transferring full body weight along the inside of the left foot to the left heel, the clubhead speed is greatly increased since the hips will have been turned to the left and no longer impede the descending arms. If the golfer applies foot pressure and shifts his weight in accordance with the foregoing, the footboard will remain parallel to the base throughout the entire stroke and the golfer will rapidly develop skill in rhythmically transferring his weight in the manner essential to achieving a correct golf stroke.

On the other hand, if the golfer does not evenly distrib-

ute his weight at the beginning of the stroke, or if he does not transfer his weight prior to downswing, he will exert an unbalancing pressure on the right side of footboard **14** causing it to tilt downwardly at the right side and until stop **20** strikes the base **11** as shown in FIGURE 6. This tilting action immediately indicates to the golfer that his balance and rhythm were incorrect. Additionally, the base **11** may be provided with a normally open switch **30** which is closed by the stop **20** striking thereagainst (FIGURE 6). As seen in FIGURES 2 and 7, the switch **30** is electrically connected in series with a battery **31** and bell **32** carried in a suitable housing **33**. Thus when the golfer tilts the footboard to the right, the switch **30** closes and bell **32** sounds as an audible signal to the golfer that he has not maintained proper balance.

It is also possible for the golfer to unbalance the footboard at any time during the stroke if he does not keep his weight on the heels. Generally the failure to apply correct foot pressure results from incorrectly applying foot pressure with the forward part of the feet. In that event, the golfer will cause footboard **14** to tilt forwardly as shown in FIGURE 5 and until stop **19** strikes the base. A switch-bell arrangement **150** similar to that previously described may also be employed for signalling an improper forward tilting.

The golfing aid **40** illustrated in FIGURE 8 is the same as that previously described except that base **41** is provided with a frontally directed extension **42** on which is mounted a golf tee **43**. Additionally, the upper surface of the footboard **44** is provided with intersecting longitudinal axis line X—X and transverse axis line Y—Y which generally denote the axes about which the footboard will tilt if the golfer does not apply proper foot pressure or transfer his weight correctly during stroking.

FIGURE 10 illustrates a somewhat different form of golfer's aid. In this embodiment, the base **11'** carries front stop **19'** and rear stop **17'** for inhibiting tilt of footboard **14'**. The undersurface of footboard **14'** is provided with a blind opening **51** into which extends stop **17'** for maintaining the footboard parallel to the base, while another blind opening **52** is provided for receiving stop **19'** if the footboard is tilted by the golfer to the position shown in dashed lines. In this manner, the use of retainer brackets for preventing rotation of the footboard with respect to the base is made unnecessary as the stops engaging in the blind holes serve that function.

The cost of manufacturing the golfer's aid is greatly reduced in the embodiment **60** shown in FIGURES 11 to 13. It includes a base comprising a continuous longitudinal member **61** to which is connected the transverse members **62, 63** by means of welding as at **64**. The ends of member **61** are upturned at a right angle as at **65, 66** so that they constitute a left stop means and a shorter right stop means, respectively. Similarly, transverse members **62, 63** have their terminal portions upturned as at **72, 73** respectively so as to constitute front and rear stop means, the front stop means being shorter than the rear stop means. A pedestal **67** having a ball-like upper surface **68** is mounted on the members **61, 62, 63** as shown for supporting footboard **69** for tilting movement, the center of the footboard having an upstanding, parti spheroid bulge **70** for receiving the ball-like surface **68**. The footboard **69** is provided with a number of upwardly stamped grooves **71** for receiving the various stop means **65, 66, 72, 73** and a downwardly depending, peripheral skirt **74** which may engage the stop means to prevent rotation of the footboard in a plane parallel to the base. Footprint indicia **75** may also be provided in the footboard. The golfer's aid **70** functions in the same manner as the previously described embodiment **10**. The particular advantage of this construction is that the footboard can be stamped from a steel sheet in a single operation, and the base formed by stamping with a minimum of welding for connecting together members **61–63** and pedestal **67**.

It is seen from the foregoing that the golfer's aid of the present invention is of considerable help to the golfer in recognizing the importance of proper weight disposition or balance and rhythm in stroking and mastering the fundamentals more quickly. By keeping the weight along the inside of the feet and on the heels during the address and early backswing, the golfer will be easily able to maintain footboard **14** level. By exerting pressure through the inside of the legs to the inside of the feet, he soon learns to keep the footboard level at the top of the backswing and by smoothly transferring all weight to the left foot and heel he soon learns the correct pivot motion which must be completed before striking the ball.

While there is above disclosed but some embodiments of the golfer's aid of the present invention it is possible to produce still other embodiments without departing from the scope of the inventive concept herein disclosed.

What is claimed is:

1. A device for aiding a golfer in learning to maintain proper balance and develop coordinated body movement when stroking a golf ball, said device comprising: a base; a pedestal mounted on the base; a ball member carried on top of the pedestal; a footboard on which the golfer may stand supported centrally on the ball member and lying in a plane spaced above said base, means permitting the front portion and one side portion of said footboard to tilt significantly downward from a horizontal plane toward said base in response to unbalanced stance forces exerted thereon by a golfer standing thereon and executing a golf swing; means for preventing the rear and other side portion of said footboard from tilting significantly downward from a horizontal plane toward said base in response to unbalanced stance forces exerted thereon by said golfer standing thereon and executing a golf swing, said last mentioned means comprising stop members extending between said base and said footboard and connected with one and engageable with the other; and means for preventing any pronounced rotation of said footboard about an axis perpendicular to said base and passing through the intersection of the longitudinal and transverse axes of said footboard.

2. A device in accordance with claim **1** wherein the upper surface of said footboard is provided with a pair of footprint indicia denoting the area thereon where the golfer should stand, said footprint indicia being located symmetrically on each side of the longitudinal axis of the footboard and equispaced from the transverse axis.

3. A device in accordance with claim **1** further comprising signal means operable in response to significant tilting of said front and one side portion from a horizontal plane toward said base, said signal means comprising separate switches mounted on said base, elements carried by said footboard adapted to actuate said switches when said footboard is significantly tilted downwardly as aforesaid, a separate source of electric current connected with each switch, and a bell series connected with each of said switches and each of said sources.

4. A device for aiding a golfer in learning to maintain proper balance and develop coordinated body movement when stroking a golf ball, said device comprising: an elongated rectangular base; a pedestal mounted on the base at the center thereof; a universally rotatable ball carried on top of the pedestal; a rectangular footboard on which the golfer may stand supported centrally on the universally rotatable ball and lying in a plane spaced above said base, means permitting the front portion and one side portion of said footboard to tilt significantly downward from a horizontal plane toward said base in response to unbalanced stance forces exerted thereon by a golfer standing thereon and executing a golf swing; means for preventing the rear and other side portion of said footboard from tilting significantly downward from a horizontal plane toward said base in response to unbalanced stance forces exerted thereon by said golfer standing thereon and executing a golf swing, said last mentioned means comprising at least two stop members carried by

the footboard and engageable with said base, one of said stop members being located on the transverse axis and rear portion of said footboard, the other of said stop members being located on the longitudinal axis and said other side of said footboard, and means for preventing any pronounced rotation of said footboard about an axis perpendicular to said base and passing through the intersection of the longitudinal and transverse axes of said footboard, said rotation preventing means comprising brackets connected with the margins of said base and extending upwardly therefrom closely adjacent the margins of said footboard.

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