July 17, 1956 J. R. HARA 2,755,091

GOLF PRACTICE DEVICE

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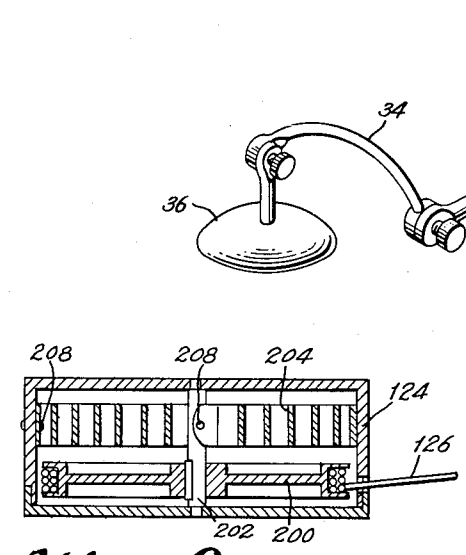


Fig. 9.

Fig. 1.

INVENTOR

James R. Hara

BY

Bacon & Thomas

ATTORNEYS

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Fig. 2.

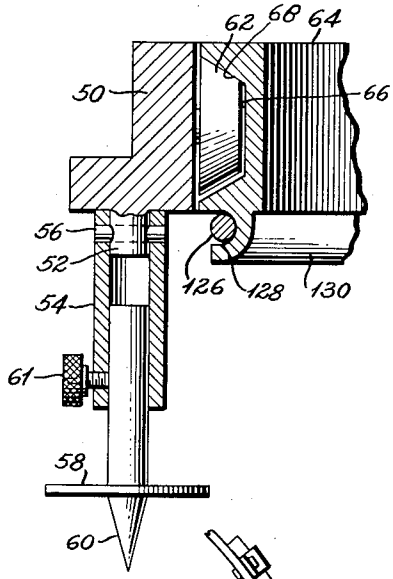


Fig. 5.

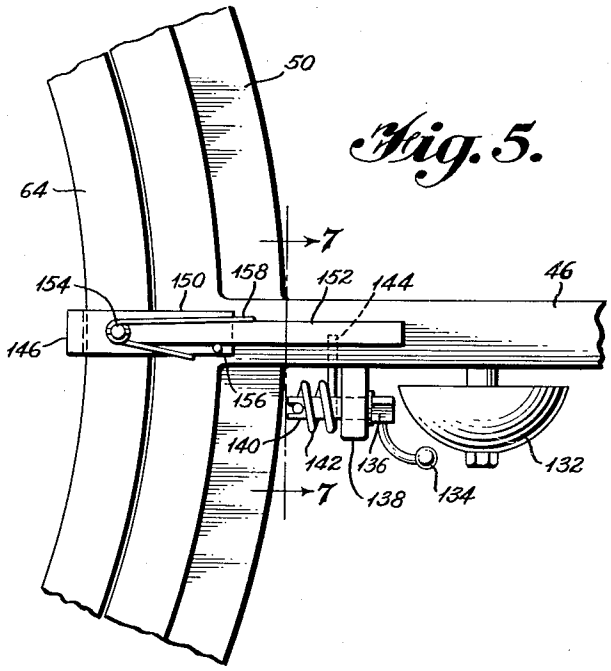


Fig. 3.

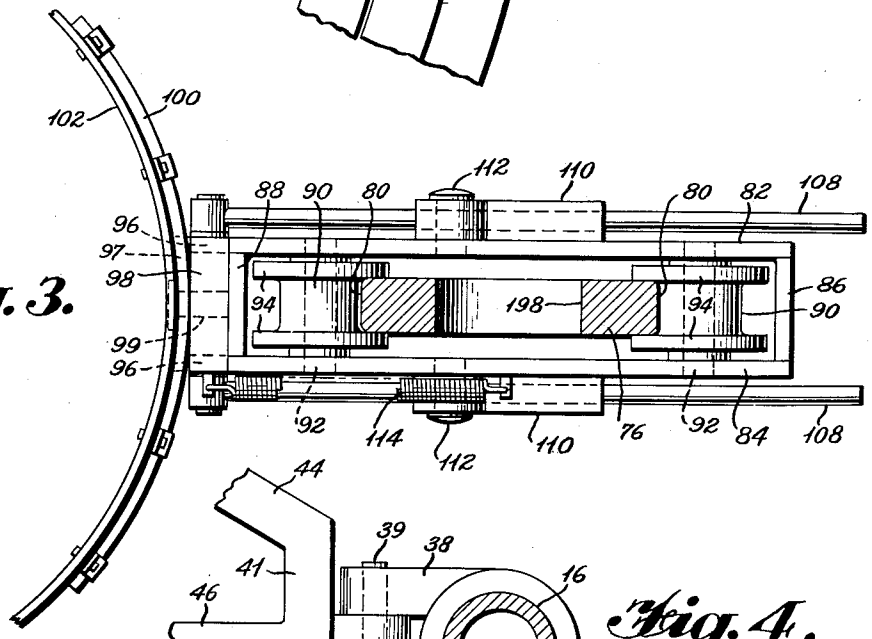
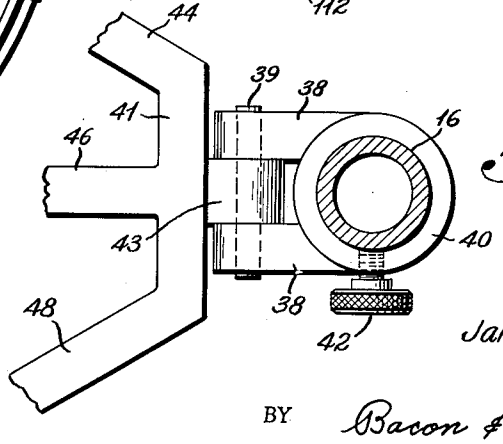


Fig. 4.



INVENTOR

James R. Hara

BY Bacon & Thomas

ATTORNEYS

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Fig. 6.

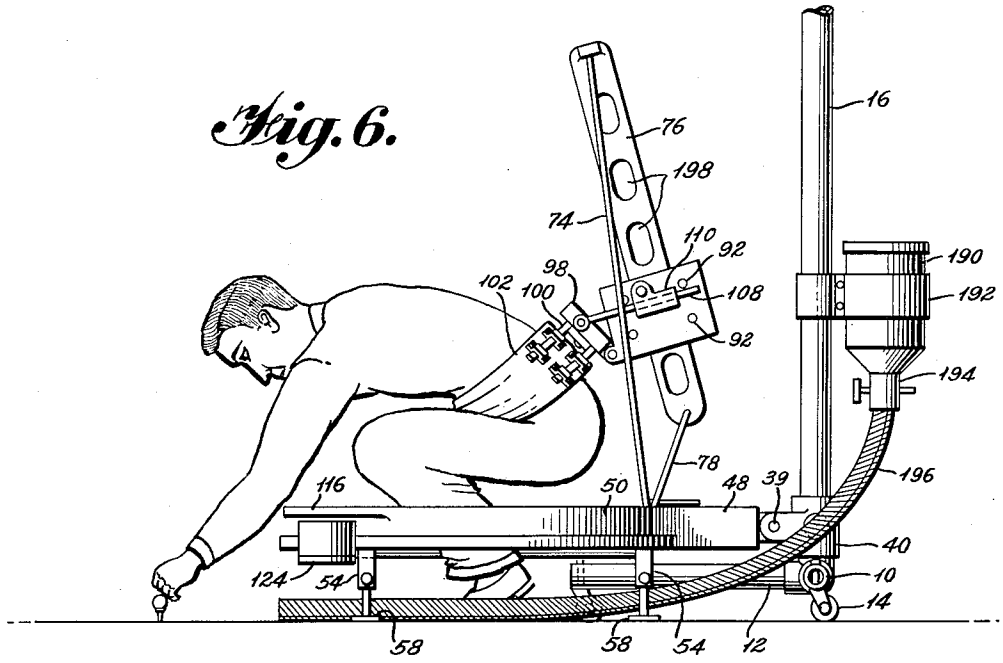


Fig. 8.

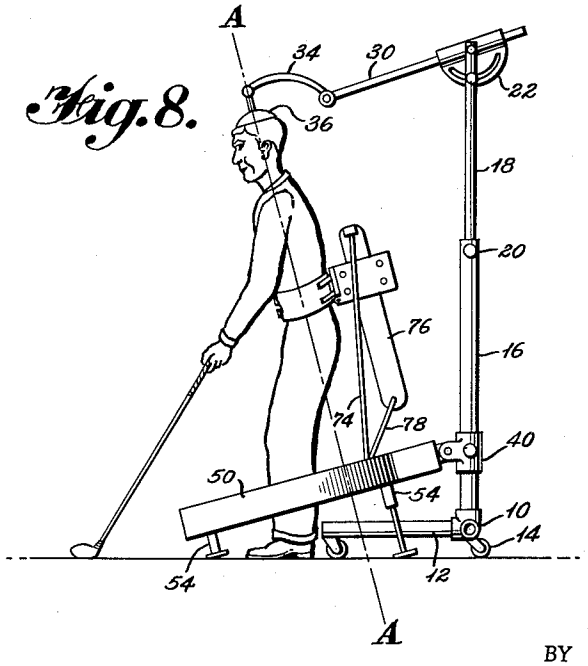
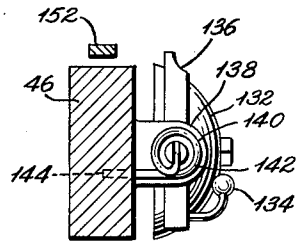


Fig. 7.



INVENTOR

James R. Hara

BY Bacon & Thomas

ATTORNEYS

United States Patent Office 2,755,091 Patented July 17, 1956

2,755,091

GOLF PRACTICE DEVICE

James R. Hara, Honolulu, Territory of Hawaii

Application October 23, 1953, Serial No. 387,974

11 Claims. (Cl. 273—190)

This invention relates to a golf practice device, and particularly to a device adapted to control and teach proper body movements during a golf stroke.

The apparatus comprises generally means for engaging and guiding the pelvic region or hips of the golfer to enforce pivotal movements around a single generally upright axis.

The apparatus generally comprises a ring or annular structure in which the golfer stands and an upstanding guide having means for engagement with the golfer's pelvic region, which upstanding guide is pivotally mounted on the annular frame for rotary movements about an axis located generally along the golfer's spine. During swinging movements the golfer's hips are thus confined substantially to rotary movement about the single axis, which is generally considered the proper golf swing. Means are also provided on the apparatus for giving a recognizable signal at the instant the golfer is supposed to "uncock" his wrists and stroke the club head through the position of the golf ball lying on the ground. The signalling means referred to is actuated by cooperating parts on the stationary frame and rotating guide means. The apparatus further includes a construction wherein the signalling means referred to further offers temporary resistance to rotation of the guiding means whereby a momentary restraint is forcibly applied to the golfer's hips to enforce a pause in his pivotal movements at the instant he is supposed to hit the golf ball. The apparatus is so constructed that a golfer using the same, while being secured to the guiding means, is still free to stoop forwardly to tee a second or additional golf ball in position to be hit. The guiding means engaged with the golfer's body do not prevent such stooping motions but are at all times effective to guide and control pivotal movements.

The apparatus further includes a head holding means to hold the golfer's head in fixed position during the swing and to permit free and unimpeded "back swing" movements of his shoulders.

The apparatus further includes resilient means resisting pivotal movements of the hip guiding means during the back swing, thus simulating the ideal conditions in a properly executed stroke wherein the golfer's left hip should at all times tend to lag and "pull" back during the back swing. This result is accomplished by a spring actuated reel having a cable attached to a movable portion of the guiding structure whereby the spring of the reel is tensioned during back swing movements.

The apparatus further is provided with a guiding edge at the front thereof extending parallel to the intended direction of flight of the golf ball. That guiding edge extends from approximately the position of the ball on the ground in the direction of flight and serves as a guide to indicate the proper "follow through" movement of the club head.

The hip guiding structure, while being mounted for rotation about a generally upright axis, comprises a belt or the like to be strapped to the golfer's pelvic region and to substantially rigidly fix the hips to a control carriage mounted for sliding movement along a vertical trackway carried by the rotary guide means but permitting some tilting of the hips about an axis radial to the upright axis. The vertical trackway is in turn pivoted to the rotary guide about a horizontal axis extending generally parallel to the golfer's hips whereby he may freely stoop or bend forwardly to adjust or replace a golf ball on a tee.

Since a golfer employing the practice device may perform all of the necessary movements to prepare for succeeding practice strokes, it is unnecessary to have an assistant or attendant present and the golfer may practice by himself.

It is therefore an object of this invention to provide a mechanical apparatus adapted to teach the proper body movements necessary for a correctly executed golf swing.

It is another object of this invention to provide mechanical means for teaching the proper golf swing by controlling hip movements only.

Still another object of this invention is to provide a golf practice device arranged to control body movements and to provide appropriate signal means to indicate the time for executing certain movements with the hands and wrists.

A further object of this invention is to provide a golf practice device as set forth above and including restraining means to restrain the hips at the proper instant at which the club head should be lashed through the ball position.

A still furter object of this invention is to provide a golf practice device adapted to positively control certain body movements during a practice swing but permitting other body movements for teeing a ball and preparing for a subsequent practice stroke.

An additional object of this invention is to provide a novel golf practice device for teaching a correct golf swing which device may be employed without the services of an assistant or attendant.

Still further and additional objects and advantages will become apparent to those skilled in the art as the description proceeds in connection with the accompanying drawings, wherein:

Fig. 1 is a perspective view of a preferred form of apparatus embodying the present invention;

Fig. 2 is a fragmentary sectional view taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional view through the vertical trackway and taken substantially along the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary sectional view taken substantially along the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary plan view of a portion of the apparatus of Fig. 1 illustrating the signalling means in somewhat schematic form;

Fig. 6 is a diagrammatic side view of the apparatus illustrating the ease with which a golfer may stoop to tee or adjust a golf ball on the ground, with certain parts of the apparatus omitted;

Fig. 7 is a fragmentary sectional view taken substantially along the line 7—7 of Fig. 5; and

Fig. 8 is a schematic side view, on a much reduced scale, illustrating a possible adjustment of the apparatus.

Fig. 9 is a fragmentary vertical sectional view through a suitable spooling reel employed with a device embodying the present invention.

Throughout the several views the same parts are identified by the same reference numerals.

Referring first to Fig. 1, there is provided a base support or frame provided with a generally T-shaped base having lateral legs 10 and a forwardly extending leg 12. Each of the legs may be provided at their ends with suitable rollers or casters 14 to facilitate movement and/or

transportation of the device to and from a position of use. An upstanding hollow post **16** is rigidly attached at its lower end to the T-frame and extends generally vertically upwardly therefrom. The hollow post **16** accommodates a vertically extending rod **18** telescoped therein and which may be held in vertically adjusted position by means of a suitable clamp screw **20**.

At its upper end the rod **18** is provided with an angularly adjustable fitting **22** pivoted to the rod **18** on a horizontal axis **24** and adapted for pivotal movement thereabout to change the angle of its tubular portion **26** with respect to the rod **18**. The fixture **22** may be held in adjusted angular position by a suitable clamp screw **28** and the tubular guide **26** slidably receives a supporting rod **30** adjustably held therein by a clamping screw **32**. A pivotally adjustable arm **34** is carried by the forward end of the supporting rod **30** and pivotally supports a suitable head engaging cap or holding member **36**. The supporting rod **30**, arm **34**, and head engaging member **36** are of a type well known in the prior art and need not be further described. However, the present apparatus does include such elements adjustably carried thereby to enable adjustment to fit a golfer of any stature and adjustable to conform to different stances.

The upstanding hollow post **16** is surrounded, adjacent its lower end, by a slidable collar **40** held in adjusted position thereon by a clamping screw **42**. Welded or otherwise fixed to the collar **40** are forwardly extending ears **38** (see Fig. 4) carrying pivot pin **39**. A block **43** on transverse plate **41** is pivotally supported by the pin **39**. The block **43** may be an integral projection on plate **41**. Integrally formed with plate **41**, or otherwise rigidly fixed thereto, are forwardly diverging arms **44**, **46** and **48** which are in turn welded or otherwise secured at their outermost ends to an annular outer frame structure **50** (Fig. 1). Referring also to Fig. 2, the annular frame **50** is of generally L-shape in vertical section and is provided with circumferentially spaced downwardly extending studs or bosses **52** to which short lengths of tubing **54** are secured by pins **56** or the like. Telescopically received within the lower ends of the tubes **54** are adjustable ground engaging foot members having horizontal flanges **58** and ground penetrating points **60**. The foot members are adjustable in the tubes **54** and may be held in adjusted position therein by means of suitable clamping screws **61**.

By the arrangement thus far described, it will be apparent that the T-frame may be moved to the desired position for practice and the collar **40** may be vertically and angularly adjusted relative to the hollow post **16** and frame **50** may be tilted about pin **39** to the desired position and thereafter the supporting feet of the annular frame may be lowered to such an extent as to force the points **60** thereof into the ground until the flanges **58** engage the surface of the ground to fix the annular frame at the desired height and angle of tilt while relieving the vertical post **16** of the weight thereof. As shown in Figs. 1 through 7, the frame **50** is positioned horizontally but it is intended that the tilt thereof about pin **39** be such that the axis of the annular frame be tilted from the vertical by an amount sufficient to cause that axis to substantially coincide with the user's spine when that person assumes his or her normal stance. Such adjustment is shown schematically in Fig. 8 where line A—A indicates the tilted axis. Different golfers, even though each may have a correct swing, assume somewhat different stances with the upper body portion bent forwardly through different angles. Regardless of the degree of inclination of the golfer's spine during address, the correct pivot axis for his or her swing lies substantially along the spine. Throughout the specification and in the claims, reference to a "generally horizontal" frame or the like is intended to include the tilted position of the frame as described above and shown in Fig. 8. Also, reference to a "generally upright" axis is intended to include a truly vertical axis and also an axis slightly inclined to the vertical as shown at A—A in Fig. 8.

It may be, in many instances, that the angle of tilt required to properly position the frame **50** is sufficiently great that the adjustable feet **58** in tubes **54** may not offer a sufficiently great range. In such instances it is contemplated that the tubes **54** and the shank portions of the feet **58** at the rear of the frame be considerably longer than those at the front portion of the frame. It is also within the scope of this invention to mount the tubes **54** on the frame **50** for angular adjustment to permit the supporting feet to extend vertically downward from a tilted frame **50**. Furthermore, the supporting feet prevent lateral sliding or rotary movements of the frame **50** with respect to the ground and therefore hold the T-frame and post **16** in fixed position.

Still referring to Figs. 1 and 2, the annular frame **50** is provided with suitable rollers **62** on its inner periphery. Any suitable number of rollers **62** are provided and are spaced circumferentially about the inner periphery of the annular frame member **50**. As shown in Fig. 2, the rollers **62** are frusto-conical, tapering inwardly, and are mounted for rotation on horizontal axes generally radial to the frame **50**. An inner annular rotary ring **64** is positioned within the periphery of the annular frame **50** with its outer surface closely adjacent the inner surface of the frame **50**. The rotary ring **64** is provided with a circumferential groove **66** having inwardly converging top and bottom surfaces, the top surface **68** of which constitutes a trackway engaging the conical surface of the rollers **62** for support and guidance thereby. The annular ring **64** is thus rotatably supported by the frame **50** for rotation about their common generally upright axis.

The diameters of the frame **50** and ring **64** are such that a person may stand on the ground within the ring **64** and have sufficient freedom of movement therein to select a comfortable position for his feet, preferably with his heels on opposite sides of the leg **12** of the T-frame.

The inner periphery of the ring **64** is provided with circumferentially spaced fixed bosses or projections **69** carrying axially aligned trunnions **70**. Bushings **72** are rotatably mounted on the aligned trunnions **70** for simultaneous rotation about a common axis extending chordally across the rear portion of the ring **64**. A pair of upwardly extending brace rods **74** have their lowermost ends fixed to the bushings **72** and extend generally upwardly and rearwardly therefrom to the uppermost end of a generally vertical trackway **76**. The upper ends of the brace rods **74** may be fixed in any suitable manner to the uppermost end of the trackway **76**. The lower end of the trackway **76** is supported by an arch member **78** having its laterally spaced lowermost ends also suitably fixed to the bushings **72**. Thus it will be seen that the rods **74**, track **76** and arch member **78** form a rigid braced structure capable of pivotal movements about the axis of trunnions **70**, which axis is in turn freely rotatable about the upright axis of the annular frame **50** and rotatable ring **64**.

Referring now to Fig. 3 along with Fig. 1, the trackway **76** is shown as a single member having opposed edges **80** defining the guiding surfaces of the trackway. As shown in the drawings, a carriage is mounted for vertical movement along the trackway **76** and comprises generally a boxlike carriage structure having open top and bottom and defined by side walls **82** and **84** and end walls **86** and **88**. The side and end walls may be fixedly secured together by any suitable means and the box or carriage is provided with two pairs of rollers **90** mounted therein on suitable axles **92**. The pairs of rollers engage the opposed surfaces **80** of the trackway **76** for rolling movement therealong and are provided with flanges **94** engaging the side faces of the trackway **76** whereby the carriage is guided for vertical movement along the trackway but is prevented from tilting about any horizontal

axis relative to the trackway **76** and is prevented from rotating around the trackway about its longitudinal axis.

The side walls **82** and **84** of the carriage extend forwardly at their lowermost corners to define ears **96** (Fig. 1) between which the lower edge of a plate **98** is pivoted on a horizontal axis generally parallel to the axes of the rollers **90**. The pivoted plate **98** has a plate **97** pivoted thereto by a pin **99** to the upper and lower edges of which rigid curved members **100** are fixed and a belt or the like **102** is fixed to the curved members **100**.

The members **100** and the belt **102** are shown in phantom line in Fig. 1 to facilitate illustration of the carriage structure.

The belt **102** may be of any desired construction or form but is preferably relatively wide and flexible and may have buckles **104** and straps **106** secured thereon whereby the belt may be placed around and secured to the pelvic region of the user and thus fixedly hold the pelvic region and hips of the user in fixed relation to the pivoted plate **98**. Since the pivoted plate **98** cannot rotate about a vertical axis independently of the carriage or trackway **76**, it will be obvious that the pelvic region and hips of the user cannot rotate about any vertical axis independently of the ring **64**. Since the ring **64** is confined to rotation about a single vertical axis, the user's hips are, therefore, confined to rotary movements about that same vertical axis.

The belt **102**, being secured to the members **100**, which in turn are pivotally adjustable about the axis of pin **99**, thus does not confine the pelvic region of the user to a fixed horizontal position but permits a slight tilting thereof about the axis of pin **99**. Such tilting has been found to be necessary to permit one hip to rise slightly higher than the other when the weight of the user is transferred to or from one leg or the other. It is preferred, however, that the tilt provided by pin **99** be limited to a relatively small angle. To this end the plate **97** is provided with an arcuate slot **101** concentric to the pin **99** and a pin **103** is fixed to plate **98** and projects into the arcuate slot **101**. Thus the pin **103** limits the angular movement of plate **97** to the desired extent and thus prevents the user from "swaying" to an improper degree.

Rather than rely on the pivotal connection between the plate **98** and the sides **82** and **84** of the carriage to insure concurrent rotation of those members, the device is provided with further means to prevent distortion or independent rotation between plate **98** and the carriage. To this end a pair of rods **108** are respectively pivoted, on horizontal axes, to opposite edges of the plate **98** and extend slidably through longitudinal bores in guide blocks **110**. The guide blocks **110** are pivoted to the sides **82** and **84** respectively of the carriage about horizontal axes at **112**. It will be apparent that the rods **108** and blocks **110** thus further assist in preventing distortional relative movements about a vertical axis between plate **98** and the carriage. The apparatus is preferably provided with a tension spring **114** extending between the side **84** of the carriage and an edge of the plate **98** and serves to normally hold the plate **98** in abutment with the end wall **88** of the carriage during all pivotal movements of the apparatus occasioned by a practice swing by the golfer. The purpose for horizontal pivotal movement between the plate **98** and the carriage will be described later.

Referring now only to Fig. 1, the annular frame **50** is formed with a horizontal forwardly extending plate or flange **116** adjacent its upper edge and extending from about its forwardmost portion laterally of the apparatus. The flange or plate **116** may be integrally formed with the frame ring **50** and defines a forward substantially straight edge **118** arranged to extend parallel to and indicate the intended direction of flight of a golf ball struck by a person using the apparatus. It is intended that the user assume a stance within ring **64** such that the edge **118** defines the intended direction of flight of the ball. The upper surface of the flange **116** may be provided with suitable indicia lines **120** which may be employed as a guide in positioning the golf ball on the ground for the particular stance assumed by the golfer and the particular club to be used. The upper surface of the frame **50** may also be provided with additional indicia markings **122** for indicating the correct angle of the club shaft during different portions of the back swing.

During the down stroke of the ideal golf swing, while the club head is approaching the ball, the club head should move outwardly from the golfer in a direction outwardly oblique to the intended direction of flight of the ball, and during and after impact of the club head with the ball the former should move in a substantially straight line along the direction of flight for a few inches. The edge **118** of the flange plate **116** serves the function of indicating the correct direction for proper "follow through" and may actually function to prevent the golfer from "pulling" a club head inwardly across the line of flight too early during the stroke.

During a correctly executed golf swing the left side of the golfer's body should not be completely relaxed but should tend to exert a forward "pull" in the direction of the down swing. The golf practice apparatus of the present invention includes means to exert such a pull, thus inducing the correct down swing by providing mechanical means to exert that pull. The frame **50**, preferably below the plate **116**, carries a spooling reel (not shown) in a suitable housing or support **124**. The spooling reel has one end of a cable or other elongated flexible element **126** wound thereon and suitable coil or spiral spring means are provided to bias the reel in a direction to further wind the cable **126** thereon. The cable **126** extends outwardly from the reel housing **124** tangentially into a groove **128** (see Fig. 2) in a downwardly depending arcuate flange **130** on the lower edge of rotatable annular ring **64**. The flange **130** and groove **128** extend a substantial distance around the ring **64** and the outermost end of the cable **126** (see Fig. 1) may be fixed or secured in any suitable manner to the ring **64**. It will be apparent that the spring-tensioned cable **126** resists clockwise rotation of ring **64** and tends to cause counterclockwise rotation thereof. Thus, during use of the apparatus pivotal movements of the golfer during his back swing are slightly resisted by the tension in cable **126** and the latter tends to "pull" the left side of the golfer around during the down swing and power stroke.

Fig. 9 shows a suitable form of spooling reel and spring in housing **124** wherein a reel **200**, keyed to a shaft **202** is arranged to have cable **126** wound thereon. The shaft **202** is journalled, at its ends, in the housing **124** and has one end of a spiral spring **204** fixed thereto at **206**. The other end of the spring **204** is secured to the casing **124** at **208**. Thus unwinding of cable **126** from reel **200**, by rotation of ring **64**, in one direction, is against the restraint of spring **204** and the spring therefor urges the ring **64** to rotate in the other direction and exert the "pull" previously described.

During the down swing of a properly executed golf stroke the hips and shoulders pause momentarily while the wrists are uncocked and the club head lashed through the ball position and then continue their pivotal movements into the follow through. The pause of the hips and shoulders and power stroke with the arms and wrists takes place at the time the golfer's hips and shoulders are parallel to the intended direction of flight of the golf ball. To properly indicate when the power stroke is to be executed with the arms and wrists and to assist or enforce a momentary pause in the pivotal movement of the hips, the apparatus is provided with a mechanical device to effect that purpose.

Referring now to Figs. 1, 5, and 7, the arm **46** by which frame **50** is attached to the collar **40** is provided with a signal bell **132** and a trigger and striker mechanism **134**. The striker arm **134** is carried by a lever **136** pivoted to

a boss or bracket **138** on the side of member **46** by means of a pivot pin or shaft **140** fixed to the lever **136** intermediate its ends. The shaft **140** extends rotatably through the bracket **138** and is surrounded by a torsion spring **142**. One end of torsion spring **142** is fixed to the arm **46**, as at **144** (Fig. 7) and the other end thereof is fixed to the shaft **140**. The torsion spring **142** is of substantial size whereby it offers substantial resistance to pivotal movements of the lever **136** and tends to hold that lever in the central position indicated in Fig. 7. The lever **136** extends upwardly above the level of the top edge of frame **50** and rotatable ring **64**. It will be apparent that if the upper end of lever **136** is pushed sideways a slight amount and then suddenly released, it will vibrate through the central position shown and cause striker **134** to engage the bell **132** and give an audible signal.

A clamp member **146** having a clamping screw **148** is removably clamped to the ring **64** as shown in Fig. 1 and includes an outwardly extending arm **150** extending over the annular frame **50**. A trigger **152** is pivoted to the arm **150** at **154** and extends outwardly sufficiently far so that its outer end will engage the lever **136** upon rotary movements of the ring **64**. The arm **150** is further provided with a stop pin **156** in position to engage a side of the trigger **152** and limit pivotal movements thereof in a clockwise direction. A suitable spring **158** is arranged to bias the trigger **152** in a clockwise direction against the stop pin **156**. Since the clamp **146** may be fixed at any desired position on the ring **64**, it may be so set that the trigger **152** engages the upper end of lever **136** at about the time the golfer's shoulders and hips approach parallelism with the intended direction of flight of the golf ball. During the down swing the trigger **152** approaches lever **136** and will engage the latter when the golfer's hips have pivoted nearly to a "straight ahead" position. At that time the spring **142** offers considerable resistance to further pivotal movement and causes a momentary pause in that pivotal movement. However, the momentum of the golfer's body is great enough to carry the hips through that position sufficiently to cause trigger **152** to tilt lever **136** and pass thereover, thus ringing bell **132** and signalling the golfer that it is time to execute his power stroke by uncocking his wrists and lashing the club head through the ball position.

If desired, a further clamp **160** (Fig. 1) may be placed on ring **64** to engage lever **136** at the top of the back swing to indicate that the limit of a correct back swing has been reached.

Fig. 6 is a schematic view illustrating the ease with which a golfer using a practice device of the present invention may stoop or bend forwardly. As clearly shown in that figure, the normally vertical trackway **76** and its associated structure may readily pivot forwardly about the axis of trunnions **70** and plate **98** may pivot forwardly relative to the carriage to permit the bending movement illustrated. In Fig. 6 portions of the apparatus have been omitted for clarity of illustration but the figure does show an accessory not illustrated in the other figures. A supply hopper **190** may be fixed by suitable clamp means **192** to the upstanding hollow post **16** for holding a supply of golf balls. The hopper may be provided with a metering device **194** of any well known construction, for releasing a single golf ball at a time from the hopper **190**. Golf balls released by the mechanism **194** may be conducted by flexible tubing or the like **196** to a position near the front of the apparatus for easy access by a golfer using the practice device. Thus, after completing a practice stroke, the golfer may release a golf ball from the hopper **190** then lean forwardly to the position shown in Fig. 6 and tee the ball just released for the next succeeding practice shot. It is then only necessary for the golfer to straighten up and assume the desired stance by engaging his head with the head holder **36** and he is in position for another practice stroke.

The apparatus may be constructed of any suitable materials and many parts are preferably cast or fabricated from the lighter metals such as aluminum or alloys thereof. If desired, the trackway **76** may be lightened considerably by providing the same with openings **198**.

While a single specific embodiment of the invention has been shown and described herein, it is to be understood that many modifications may be resorted to without departing from the invention as defined in the appended claims.

I claim:

1. In a golf practice device, a stationary generally horizontal frame having a vertical opening therethrough the periphery of which defines a circular guide, an annular rotary structure supported and guided by said circular guide for rotary movement about a generally upright fixed axis extending substantially centrally through said opening, an upstanding member on said rotary structure, said upstanding member supporting holding means to engage and hold the pelvic region of a person in substantial fixed relation thereto while said person stands in the central region of said opening, and means supporting said horizontal frame closely adjacent the ground, said upstanding member being pivoted to said rotary structure on a horizontal axis for swinging movement toward and from said fixed axis.

2. A golf practice device as defined in claim 1 wherein said frame comprises an annular structure and wherein said rotary structure comprises an annular ring concentrically arranged within the inner periphery of said opening, there being cooperating roller and track means between said structure and ring for supporting said ring on said structure for rotation about their common axis.

3. A golf practice device as defined in claim 1 wherein said holding means includes a carriage mounted on and guided for vertical movement along said upstanding member and wherein said means for engaging and holding said pelvic region is mounted on said carriage.

4. A golf practice device as defined in claim 1 including means resiliently resisting rotation of said rotary structure about said axis in one direction and urging rotation thereof in the other direction.

5. A golf practice device as defined in claim 1 including a reel rotatably mounted on said frame, an elongated flexible element having one end wound on said reel, spring means urging said reel to rotate in a direction to wind said element thereon, the other end of said element being attached to a portion of said rotary structure adjacent the edge of said opening, and means for guiding said element about the periphery of said opening upon rotation of said rotary structure on said frame.

6. A golf practice device as defined in claim 1 including cooperating means on said rotary structure and frame, respectively, arranged to temporarily and releasably restrain rotation of said rotary structure at a predetermined position of rotation thereof with respect to said frame.

7. A golf practice device as defined in claim 1 wherein said upstanding member comprises a generally vertical trackway pivoted to said rotary structure about a horizontal axis adjacent the plane of said frame and laterally offset from the axis of said opening, said last-named means comprising a carriage freely movable along said trackway, said means for holding said pelvic region being mounted on said carriage.

8. A golf practice device as defined in claim 1 wherein said upstanding member comprises a generally vertical trackway pivoted to said rotary structure about a horizontal axis adjacent the plane of said frame and laterally offset from the axis of said opening, said last-named means comprising a carriage freely movable along said trackway, said means for holding said pelvic region being mounted on said carriage and including a belt-like member for engaging said pelvic region, said belt-like member being pivoted to said carriage about an axis substantially parallel to said horizontal axis.

9. A golf practice device comprising, an annular frame, means for supporting said frame in a fixed generally horizontal position adjacent a generally horizontal supporting surface, an annular ring arranged concentrically within and adjacent the inner periphery of said annular frame, cooperating track and roller means on said frame and ring and arranged to support and guide said ring for free rotation in said annular frame about the central axis thereof, a rigid upstanding structure having horizontally spaced lower extremities pivoted to circumferentially spaced portions of said ring on a common horizontal axis extending along a chord of said annular ring, said upstanding structure including an elongated upwardly extending trackway, a carriage, roller means on said carriage engaging said trackway to guide said carriage therealong, means for preventing any movement of said carriage relative to said trackway other than movement of translation therealong, and holding means on said carriage for attachment to the pelvic region of a person standing on said supporting surface and within said ring, said last-named means being arranged to hold said pelvic region and carriage in substantially fixed relation to each other whereby to substantially restrain pivotal movements of said pelvic region to pivotal movements about said central axis.

10. A golf practice device as defined in claim 9 wherein said holding means is mounted on said carriage for

limited pivotal movement thereon about an axis generally radial to said generally upright axis whereby to permit some tilting of the person's pelvic region to raise and lower said person's hips relative to each other.

11. In a golf practice device, a fixed frame, means rotatably mounted on said frame for rotation about a single upstanding axis and having means thereon for engaging and guiding the pelvic region of a person for pivotal movements about said single upstanding axis, means mounting said engaging and guiding means on said frame for free translational movement in a generally vertical direction and for tilting movement in a plane radial to said axis whereby said person may freely assume a squatting or stooping position while engaged by said means.

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