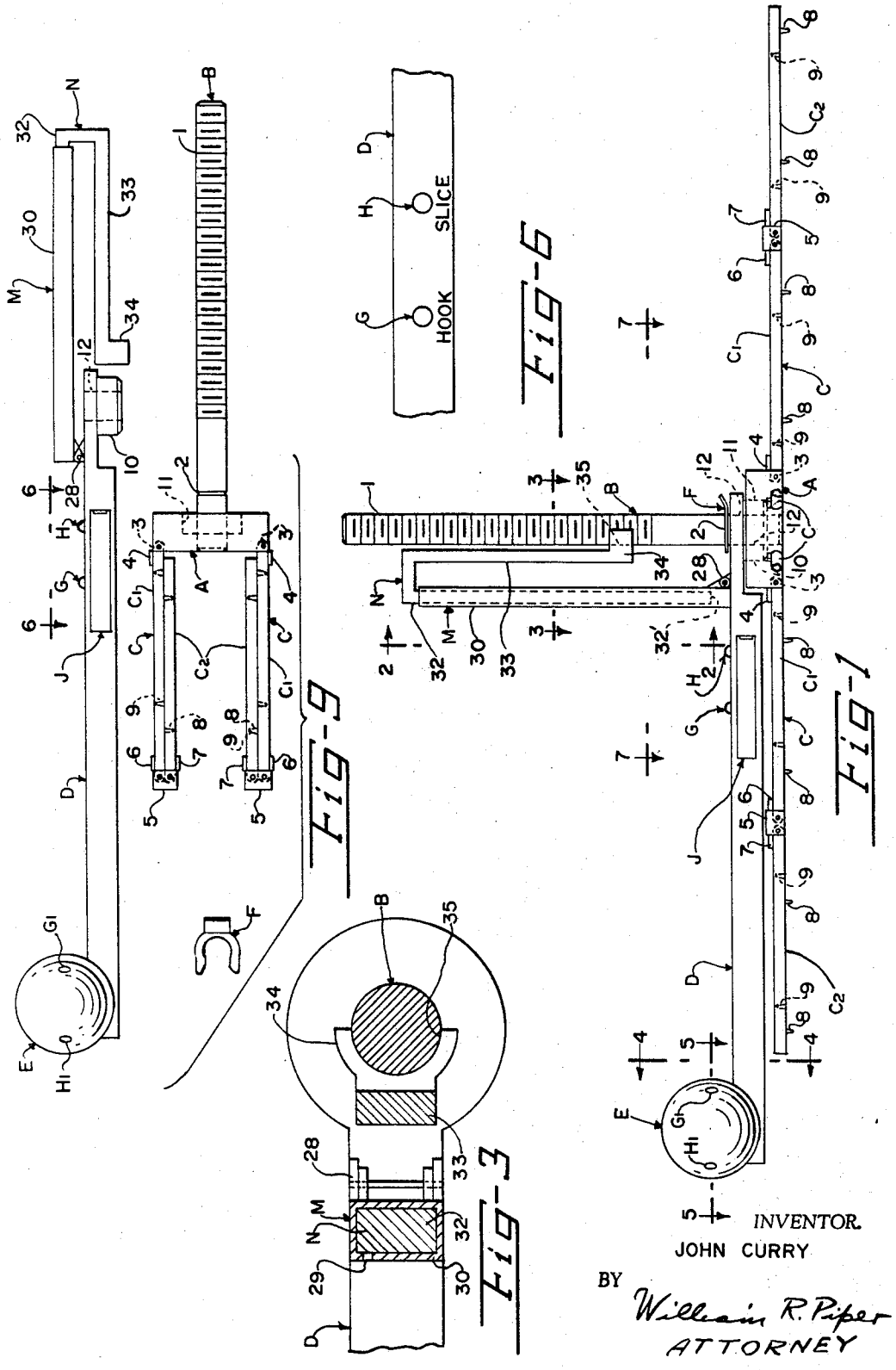
Dec. 24, 1968 J. CURRY 3,417,620

GOLF PRACTICE DEVICE

Filed Oct. 24, 1966 2 Sheets-Sheet 1



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GOLF PRACTICE DEVICE

Filed Oct. 24, 1966 2 Sheets-Sheet 2

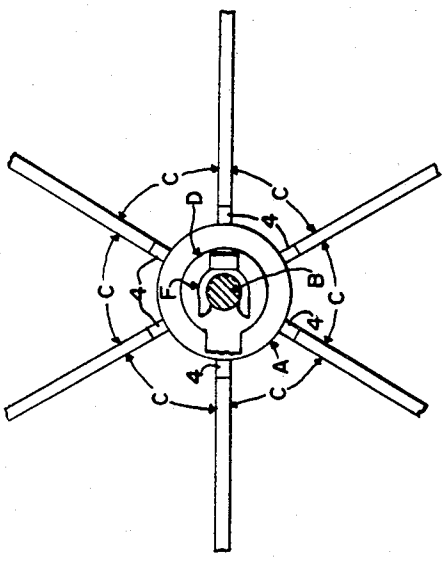


Fig-7

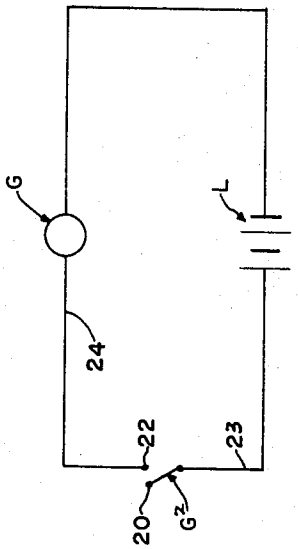


Fig-8

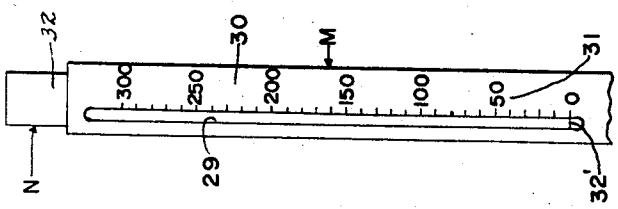


Fig-2

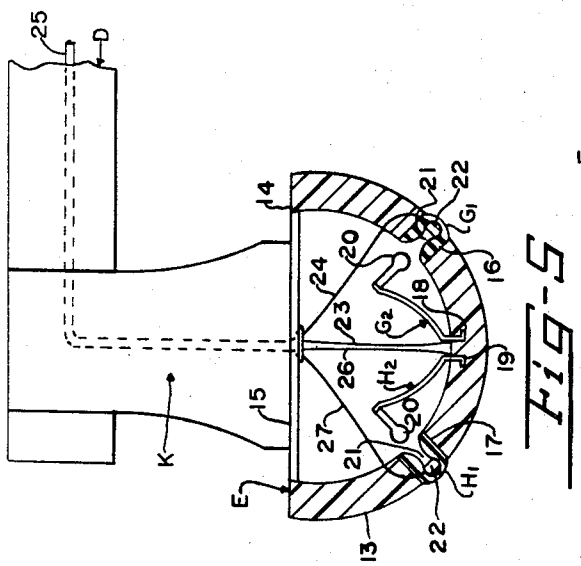


Fig-5

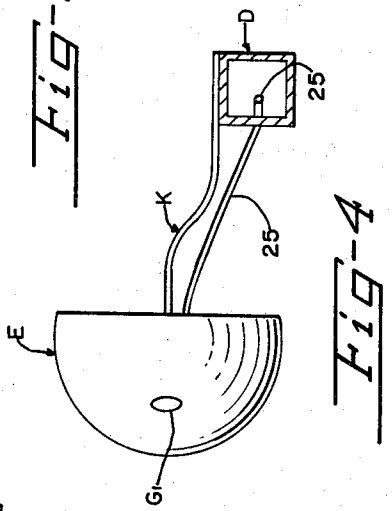


Fig-4

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GOLF PRACTICE DEVICE

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9 Claims. (Cl. 73—379)

ABSTRACT OF THE DISCLOSURE

A golf practice device whereby a simulated ball is struck by the golf club, and an indication of the yardage and trueness of the stroke is indicated. Said indication of the yardage being recorded by a rotatable arm which drives a threaded indicator pin along an upright screw threaded post, the distance traveled by the pin along an adjacent scale carried by the arm being the measure of the yardage. Said trueness of the stroke being recorded by electrical contacts positioned inside the simulated ball, and upon impact with the club, the contacts are activated to complete an electric circuit, whereby indicator lights are flashed to produce the indication of trueness.

The present invention relates to improvements in a golf practice device and it consists in the constructions and arrangement of parts hereinafter described and claimed.

My golf practice device is an aid to golfers in all stages of experience, from amateur to professional, and will aid them in acquiring and/or maintaining the ability to hit a golf ball without "hooking" or "slicing" it. The device helps a golfer to hold the golf club properly so that his swing will not be "inside" or "outside" which causes what is commonly known as a "hook" or a "slice." The device will also indicate the length of a golf ball shot in yards that may be attained with the same amount of power used by the golfer in his swing. An added feature of the device is that it can be used any place where there is sufficient room to swing a club, commonly described as a "one-wood." Indicator lights will be illuminated when the golf club hits the simulated golf ball which under normal conditions would produce a "hook" or a "slice" shot and this will inform the golfer what type of a stroke he has just produced. When the face of the club head strikes the simulated golf ball dead-on for a straight-down-the-fairway shot, both lights will be activated simultaneously and the golfer will know that his swing of the golf club was correctly made.

The parts of the device can be disassembled for compact storage or transportation and certain of the parts can be folded to occupy a small space. This will permit the device to be packed into a small container when not in use. The device is simple in construction and is durable and efficient for the purpose intended.

Other objects and advantages will appear as the specification continues and the novel features of the invention will be set forth in the appended claims.

Drawings

For a better understanding of my invention, reference should be made to the accompanying drawings, forming a part of this application in which:

FIGURE 1 is a side elevation of the device which has been designed to be used by a right handed golfer.

FIGURE 2 is an elevational view of the hollow sleeve when looking in the direction of the arrows **2**—**2** of FIGURE 1, and shows the counter-slide slidably received in the sleeve. The sleeve has an elongated slot or window for exposing the counter-slide and a yardage-indicating scale parallels the window for indicating the yardage a golf ball would have travelled if hit with the same force as that received by the simulated golf ball when struck by the club.

FIGURE 3 is an enlarged horizontal section taken along the line **3**—**3** of FIGURE 1, and shows the counter-slide in the yardage-indicating sleeve, the sleeve in turn being pivotally secured to the swivel arm.

FIGURE 4 is an enlarged transverse section taken along the line **4**—**4** of FIGURE 1, and illustrates how the simulated golf ball is yieldingly supported by the swivel arm.

FIGURE 5 is an enlarged horizontal section taken along the line **5**—**5** of FIGURE 1, and shows two novel electric switches mounted in the simulated golf ball, either one or both of these switches being automatically closed depending on how the golf club head strikes the ball. The simulated golf ball is the same size as a standard golf ball, but the back of the ball is cut away to give access to the ball interior.

FIGURE 6 is a top plan view of a portion of the swivel arm when looking in the direction of the arrows **6**—**6** of FIGURE 9, and illustrates the two lights that indicate when the golf club hits the simulated golf ball in such a manner as to produce a "hook" or a "slice." When the club head strikes the ball correctly, both lights will be activated to indicate this.

FIGURE 7 is a horizontal section taken along the line **7**—**7** of FIGURE 1, and shows the counter post supported by the base or platform and illustrates the part of the swivel arm that is rotatably and removably mounted on the base. A key or keeper is received in an annular groove in the counter post and permits rotation of the swivel arm when the ball is struck by the golf club while preventing the swivel arm from riding upon the counter post.

FIGURE 8 is a simple wiring diagram which is used for each of the two indicator lights.

FIGURE 9 is a view showing the parts of the device disassembled with the swivel arm removed from the counter post, this being made possible when the key or keeper is freed from the annular groove in the post. Also the hollow sleeve with its counter-slide has been swung about its pivotal connection so as to extend substantially in line with the length of the swivel arm. The jointed and normally radially extending legs have been swung into collapsed position and substantially parallel the axis of the counter post.

While I have shown only the preferred form of my invention, it should be understood that various changes, or modifications may be made within the scope of the annexed claims without departing from the spirit thereof.

Detailed description

In carrying out my invention, I provide a base or platform indicated generally at A in FIGURES 1 and 7. The base is circular in shape and may be weighted to support the mechanism which will presently be described. A post B is centrally mounted in the base A, and it has a threaded portion **1**, and an annular groove **2**, the groove being spaced a predetermined distance above the top of the base. The post B extends perpendicular to the base.

Articulated legs C are pivotally secured to the base A at 3 and can be swung from an inoperative position shown in FIGURE 9, into an operative position where they will extend radially from the base as shown in FIGURES 1 and 7. I provide six legs, but I do not wish to be confined to any exact number. All of the legs are of identical construction and therefore a description of one will suffice for all and similar parts will be given like reference numerals. Each leg is composed of two sections, an inner section shown at C1 and an outer section shown at C2.

Each inner section C1 has a stop **4** that abuts the outer periphery of the base A when this leg section is swung from a position substantially paralleling the axis of the post B, into a position where it will extend radially with respect to the center of the base. An inverted U-shaped

member **5** pivotally connects the inner leg section C1 to the outer leg section C2, as clearly shown in FIGURE 1. A stop **6** on the outer end of the leg section C1, and another stop **7** on the inner end of the leg section C2, abuts the U-shaped member **5** when the outer leg section C2 is swung into alignment with the inner leg section C1. If desired the legs C may be provided with ground-penetrating pins or spikes **8** and these are received in recesses **9** in the adjacent leg sections when the leg sections are swung into inoperative position as shown in FIGURE 9.

I will now describe the swivel arm D which carries the simulated golf ball E, see FIGURES 1, 3, 4, 5, 6, 7 and 9. The arm has a circular inner recess **11** provided in the top of the base A, note FIGURE 7, where the swivel arm D is shown separated from the base. A metal keeper or key F of the shape shown in FIGURE 9, is removably received in the groove **2**, after the bushing **10** with its bore **12** is slid over the post B and is moved so that the bushing will be rotatably received in the circular recess **11**. The keeper F prevents the swivel arm from riding upwardly on the post B when the arm is rotated about the post.

The swivel arm D is preferably square in cross section and is hollow as shown in FIGURE 4. Two indicating lights for "hook" and "slice" golf strokes are mounted on the swivel arm D, and are shown at G and H in FIGURE 6. A battery for each light is removably mounted in the swivel arm and a sliding door J is shown in FIGURE 1, for closing the openings to the battery receiving compartments, not shown. A simple wiring circuit as illustrated in FIGURE 8 is associated with each stroke-indicating light and it will be described hereinafter. The battery receiving compartments may be provided with fixed electrodes, not shown, that will automatically connect the batteries into the electric light circuits by the mere insertion of the batteries into their compartments.

The swivel arm D carries the simulated golf ball E, at its outer end. Both FIGURES 4 and 5 show an attach-arm K yieldingly connecting the simulated golf ball to the swivel arm. The attach-arm K is in the form of a "lazy-S" and extends at right angles to the swivel arm.

The simulated golf ball E is preferably made from a rigid plastic and the outer spherical surface **13** of the ball is the same size as a standard golf ball. However, the simulated golf ball E is only slightly larger than a half sphere of the standard golf ball. In other words the simulated golf ball has its rear edge **14** lying in a plane that is spaced about one-fourth of an inch from a parallel plane that cuts the golf ball in half, both planes also extending parallel to the longitudinal axis of the swivel arm D. A metal strip **15** extends across the open rear of the simulated golf-ball E and is welded or otherwise secured to the adjacent end of the attach-arm K.

Two rubber inserts G1 and H1 are mounted in two openings **16** and **17**, provided in the wall of the ball E, the wall being about one-fourth inch thick. Two flexible electrodes G2 and H2 have their ends **18** and **19**, respectively embedded in the wall of the simulated golf ball E, see FIGURE 5. The outer tip **20** of each flexible electrode G2 and H2, is spherical and is removably received in the spherical inner end of a socket **21** provided in each rubber insert G1 and H2. The outer tip or head **20** has a smaller diameter neck that is received in the smaller diameter neck portion of the socket **21**. When a golf club head strikes the outer surface **13** of the simulated golf ball E, near the rubber insert G1 or the rubber insert H1, then the flexible electrode G2 or H2 disposed near the struck surface will have its spherical tip **20** driven into the adjacent socket. The shape of the socket **21** will hold the tip in the rubber insert. To release the tip from the socket, the operator presses on the outer convex end of the rubber insert and this will force the spherical head or tip **20** out of the socket **21**.

The tip **20** is made of an electrical conducting material such as metal and constitutes the outer end of a switch

arm, the flexible electrode G2 or H2, constituting the arm itself. A ring-shaped electrical terminal **22** is mounted in the enlarged inner portion of the socket **21** and is contacted by the spherical head or tip **20** of the flexible electrode G2 or H2, this depending upon where the golf club head strikes the surface **13** of the simulated golf ball E. The ring-shaped terminal constitutes the other part of the electric switch. A pair of wires **23** and **24** lead from the electrode G2 and the ring **22** in the rubber insert G1, respectively. These two wires then are enclosed in a cable **25** that extends from the simulated golf ball E and enters the interior of the swivel arm D. The wires **23** and **24** are electrically connected to a battery L and to the indicating light G that represents a "hook" shot, see the simple wiring diagram in FIGURE 8.

The other indicating light H, representing a "slice" shot, has wires **26** and **27** connected to it and to a battery and then the wires are connected to the electrode H2 and to the terminal ring **22** mounted in the socket **21** of the rubber insert H1. The wires may extend through the same cable **25** for portions of their lengths. If the golfer should make a perfect swing and cause the club head to strike the surface **13** of the simulated golf ball E, midway between the two rubber inserts G1 and H1, then the inertia of both of the flexible electrodes G2 and H2 at the moment of impact will cause the sockets **21** of both rubber inserts to receive the tips **20** of both electrodes and close both electric circuits, one to each of the two indicating lights, G and H, causing them both to be illuminated. The golfer will then know that his golf club swing has been correctly made. The electrodes can be freed from the rubber inserts by the operator pressing inwardly on the convex outer ends of both inserts.

I provide a yardage-indicating apparatus for indicating the number of yards a golf ball would have travelled if it had been hit with the same force by the golf club that strikes the simulated golf ball E. In FIGURES 1 and 3, I show a hollow sleeve M that is pivotally mounted on the top of the swivel arm D, by a hinge **28**. The hinge **28** is mounted at the back side of the sleeve M so that the sleeve cannot swing to the left in FIGURE 1 from its vertical position. The sleeve M, however, can be swung to the right as shown in FIGURE 9, when the swivel arm D has been freed from the post B, and the operator wishes to swing the sleeve into a parallel relation with the length of the swivel arm D, so as to take up less lateral space.

FIGURE 2 illustrates a front view of the hollow sleeve M, when looking at the left hand side of the sleeve in FIGURE 1. The sleeve has an elongated slot **29** in its front wall **30** and a scale **31** extends along one edge of the slot and indicates distance in yards for the flight of a golf ball after being hit. The scale indicates the number of yards from "0" to "300" although I do not wish to be confined to any exact number of yards.

A counter slide N is in the shape of an inverted U and one leg **32** is slidably received in the sleeve M while the other leg **33** parallels the post B and is disposed close to it when the parts of the device are in assembled position as shown in FIGURE 1. At the lower end of the leg **33**, I provide a projection **34** that extends at right angles to the longitudinal axis of the post B. This projection **34** has a concave recess **35**, see FIGURE 3, that has the same radius as that of the post B. The recess **35** is threaded and the threads receive the threads **1** on the post B. The leg **33** has enough resiliency to permit the leg to flex when the projection **34** is manually moved a slight distance away from the threads **1** when the operator wishes to move the counter-slide N quickly into the sleeve M or when he wishes to remove the post B from the bore **12** in the swivel arm D for disassembling the parts for packing.

The pitch and number of threads on the post B and in the threaded recess **35** on the projection of the counter slide N is such that when the simulated golf ball E is hit hard enough to drive a standard golf ball, say one hun-

dred yards, the struck ball E will rotate the swivel arm D through a sufficient number of rotations about the post B to raise the lower end **32'** of the leg **32** from its initial registering position with the "0" mark on the scale **31** up to a position where the end **32'** will register with the mark "100" on the scale. The counter-slide or indicator N will remain in the position into which it has been moved by the rotating swivel arm D, and the golfer can then note how long a flight the standard golf ball would have taken if it were hit with the same force. It is a simple matter for the golfer to return the counter-slide back to starting position and this is accomplished by springing the resilient leg **33** away from the post B and sliding the leg **32** back into the counter-slide sleeve **32** until its lower end **32'** again registers with the "0" reading on the scale **31**, see FIGURE 2. If a left handed golfer is to use the device, the attach arm K would extend to the right in FIGURE 4 rather than to the left and the simulated golf ball E would also extend to the right. Also the pitch of the threads **1** on the counter post B would be changed so that a counter-clockwise rotation of the swivel arm D, would cause the counter-slide N to travel upwardly on the threads **1** and indicate the length of the golf ball shot on the scale **31**.

Operation

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. FIGURE 1 shows the device in operative position. If pins **8** on the legs C are used, the pins would be forced into the ground to anchor the device in place.

The golfer faces the front wall **30** of the sleeve M and the swivel arm D extends substantially toward him so that the simulated golf ball E will be positioned directly in front. The golfer swings the golf club, not shown, so that the club head will strike the simulated golf ball E and drive it so that the swivel arm D will be rotated clockwise about the post B. The attach-arm K will act as a buffer-action for the initial harsh impact of the golf club face against the simulated golf ball E. The "lazy-S" shape of the attach arm K causes it to absorb the impact of the golf club through its spring-like action. The primary impact of the swinging club will be absorbed by the ball-face **13**. A secondary, but instantaneous absorption will be through the spring-like action of the attach-arm K. A third, but also instantaneous absorption, will be the action of the instant motion imparted to the swivel-arm D.

Either one or both of the flexible electrodes G2 and H2 will have their spherical tips **20** driven into the sockets **21** of the rubber inserts G1 and H1, this depending upon how the club head strikes the simulated golf ball E. An "inside-swing" will indicate a "hook" shot and the illumination of the "hook" light G will indicate this. Also an "outside-swing" will indicate a "slice" shot and will illuminate the "slice" light H on the swivel arm D. A perfect shot will cause both lights G and H to be illuminated. The closed electric circuits to the lights can be opened by the golfer pressing against the mound-like protrusions of the rubber insert portions that extend beyond the surface **13** of the simulated golf E. This will expel the spherical tips **20** from the inserts and open the circuits.

The device will not only register a "hook" or "slice" shot or a perfect golf shot, but it will also indicate the length of the shot. The simulated golf ball E, when struck by the golf club head will rotate the swivel arm D in a clockwise direction about the post B. The projection **34** of the counter-slide N, will have its threaded recess **35** ride on the threads **1** of the counter-post B. The number of revolutions made by the swivel arm D will depend upon the force of the blow of the golf club head against the simulated golf ball E. This will move the counter slide N, upwardly in the sleeve M and the lower end **32'** will move along the yardage scale **31**, and when it comes to rest, it will indicate the length of the flight of a standard golf ball if hit with the same force. The counter-slide N can be returned to starting position and the device is ready for the next operation. The resilient leg **33** is pressed so as to free the projection **35** from the post B during the return movement of the counter-slide N.

In FIGURE 9, I show the parts of the device disassembled for packing into a small space. The keeper or key F is removed from the groove **2** in the post B, and then the leg **33** is flexed toward the leg **32** while the swivel arm D is moved off from the post. The depressing of the leg **33** during this movement frees the threads **35** in the projection **34** from the threads **1** on the post B, and this permits the ready sliding of the swivel arm D along the post B to free it from the post.

The radially extending legs C are now swung into folded position and into parallel arrangement with the axis of the post B, as shown in FIGURE 9. The sleeve M is swung about its pivot **28** so as to lie parallel with the swivel arm D. The key F may be reinserted into the groove **2** in the post B, so as not to become lost. The parts will now occupy less space and may be packed into a container, not shown.

The positioning of the inserts G1 and H1 in the ball E and the positioning of the electrodes G2 and H2 with reference to the inserts is important. Note that the two inserts are disposed in a horizontal plane and at equal distances from the center of the ball and that the anchored ends of the electrodes are substantially at the ball center. If now the golf club head should strike the ball in the area of the insert G1, the electrode G2 would extend substantially at right angles to the direction of the blow and its head **20** would be driven into the socket **21** of the insert to close the electric circuit and illuminate the "hook" indicating light G.

At the same blow just described, the electrode H2 would be substantially in line with the direction of the blow and its head **20** would not enter the socket **21** of the insert H1. The opposite would be true if the golf club head should strike the ball E in the area of the insert H1. Then the head **20** of the electrode H2 would enter the socket **21** of this insert and the other electrode G2 would extend in the general direction of the blow and its head **20** would not be driven into the socket of the insert G1.

It has already been pointed out that if the gold club head correctly hits the ball E at its center which lies midway between the two inserts G1 and H1, then the force and direction of the blow will cause the heads **20** of both electrodes G2 and H2 to enter their associate sockets. Both electrodes will extend at an angle to the direction of the blow and the electrodes are resilient enough to permit their heads **20** to move into the sockets of the associate inserts.

I claim:

1. A golf practice device comprising:

(a) a base having an upstanding post with a threaded portion;

(b) a swivel arm rotatable about said post;

(c) a simulated golf ball carried by the outer end of said arm;

(d) a yardage-indicating apparatus carried by said arm and having a yardage-indicating scale for indicating the length of the flight of a golf ball; and

(e) an indicator slidably carried by said scale, and ratatably movable therewith, for movement along the scale and having a threaded connection with the threaded portion on said post so that a rotation of said arm about said post, caused by said simulated golf ball being hit by a golf club, will move said indicator about said threaded post for advancing said indicator along said scale for showing the total yardage of the hit.

2. The combination as set forth in claim **1** and in which:

(a) said base has a plurality of legs pivotally connected to said base and extending outwardly in radial direc-

tions from said post when the legs are in operative position;

(b) each leg consisting of two hinged sections with the outer section being foldable into parallel relation with the inner section and both sections being swingable into parallel relation with the post axis when said legs are in inoperative position.

3. The combination as set forth in claim 1 and in which:

(a) said yardage-indicating apparatus comprising a sleeve that parallels the post axis, said sleeve having a slot therein with a yardage-indicating scale paralleling the slot; and

(b) said indicator having a leg slidable in said sleeve and showing through the slot so that its inner end registers on the scale, said indicator having an arcuate threaded recess meshing with the threaded portion of said post;

(c) whereby a rotation of said arm when said ball is hit will cause said indicator's threaded recess to move along the threaded portion of said post and move said leg for causing its inner end to register on said scale.

4. The combination as set forth in claim 3 and in which:

(a) said sleeve is pivotally secured to said arm and is swingable into a parallel relation with said arm when said arm is removed from said post.

5. The combination as set forth in claim 3 and in which:

(a) the threaded portion of said indicator being movable out of mesh with the threaded portion of said post for permitting the leg of said indicator to be moved in said sleeve into a desired position with respect to said scale.

6. In a golf practice device:

(a) a simulated golf ball having a wall;

(b) resilient inserts mounted in said wall with the outer ends of said inserts extending a slight distance beyond the outer surface of the wall;

(c) said inserts having electrode-receiving sockets, the sockets having enlarged inner portions with narrow necks that open onto the interior surface of said wall;

(d) a flexible electrode for each insert and having one end anchored in said wall and the outer end provided with a head removably receivable in the enlarged inner portion of the socket;

(e) each electrode when in normal position holding its head in registration with its associate socket and at a spaced distance therefrom, said head being receivable in the associate socket when said ball is struck by a golf club at a point near the insert, the narrow socket neck retaining the head in the insert;

(f) an electric terminal mounted in each insert and contacted by said head when the latter is received in said socket;

(g) a separate golf stroke indicating light in electric connection with each terminal, said electrode and head constituting the other terminal for connecting said light to a source of current when the electrode head is received in the socket; and

(h) the protruding end of said insert being manually depressible for forcing said head from said socket for opening the electric circuit.

7. The combination as set forth in claim 6 and in which:

(a) an arm for carrying said lights; and

(b) an attach arm resiliently connecting said ball to said first-named arm.

8. The combination as set forth in claim 7 and in which:

(a) said inserts being disposed equal distances from the center of the ball and their axes lying in the same plane which in turn extends parallel to the same plane in which said first-named arm lies;

(b) the anchored ends of the electrodes being at the center of the ball and the lengths of the electrodes extending substantially at right angles to the axis of their associate insert;

(c) whereby a blow of a golf club head on the ball near an insert will cause the head of the electrodes associated with the insert to move into the socket of the same insert and be retained while the head on the other electrode will not enter the socket of the other insert.

9. The combination as set forth in claim 8 and in which:

(a) a blow of a golf club head on the ball midway between the two inserts will cause the heads of both electrodes to move into the sockets of the associate inserts and be retained.

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U.S. Cl. X.R.

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