July 17, 1934. A. DE V. HARNETT 1,966,960

GOLF BALL PRACTICE DRIVING APPARATUS

Filed Oct. 29, 1931 3 Sheets-Sheet 1

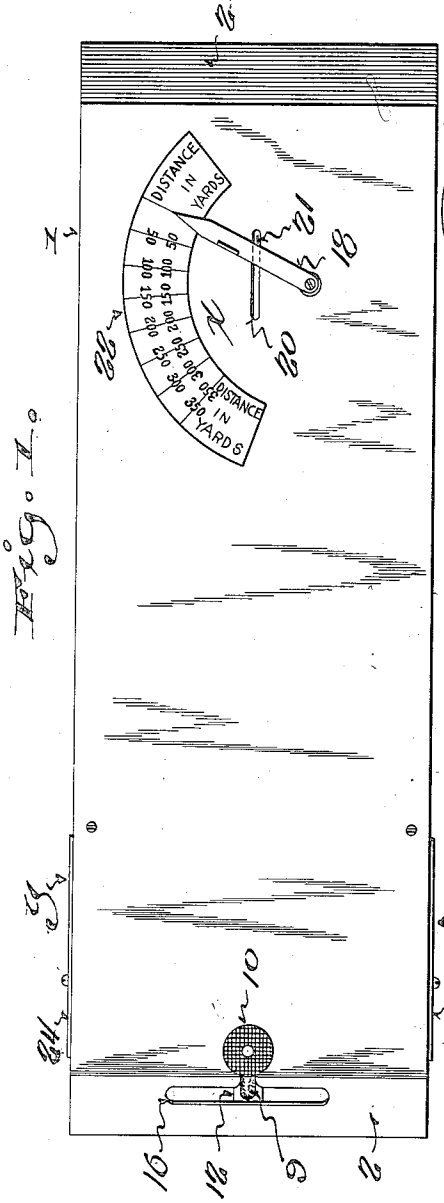


Fig. 1.

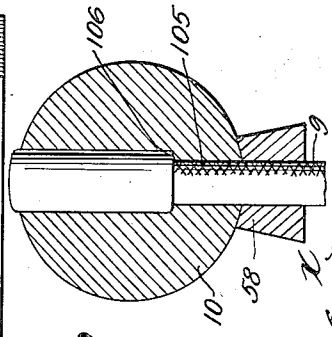


Fig. 10

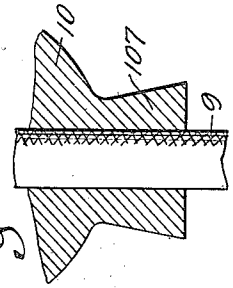


Fig. 11

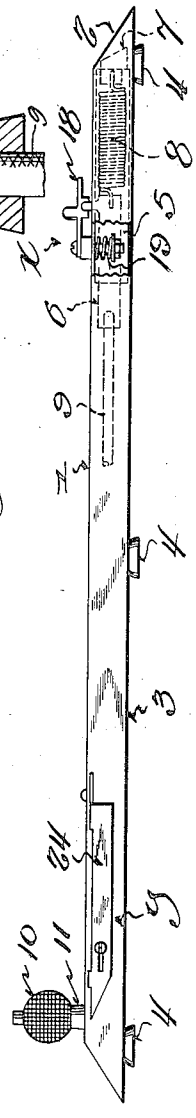


Fig. 2.

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July 17, 1934. A. DE V. HARNETT 1,966,960

GOLF BALL PRACTICE DRIVING APPARATUS

Filed Oct. 29, 1931 3 Sheets-Sheet 2

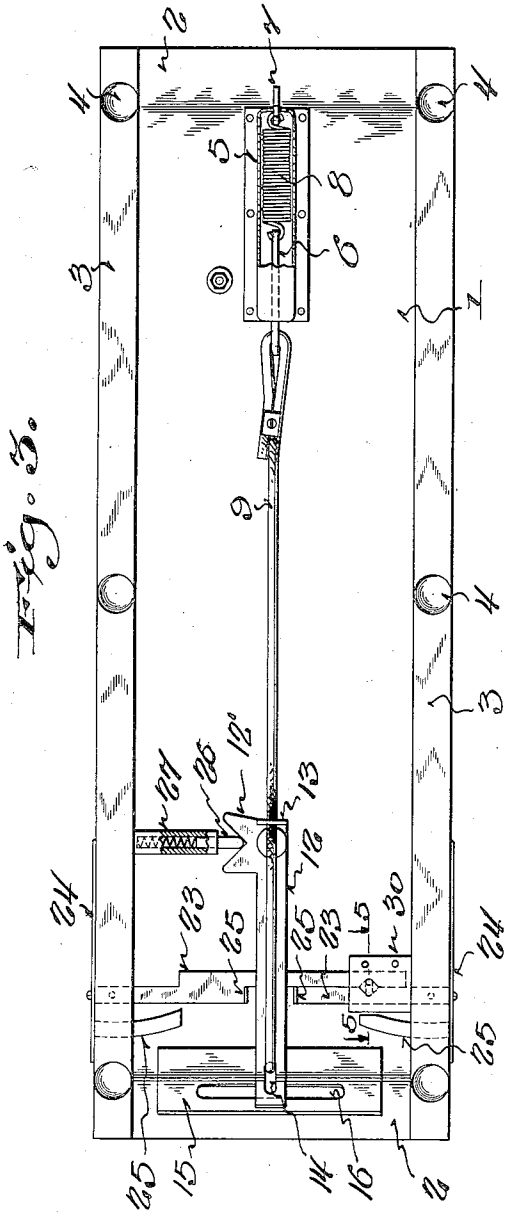


Fig. 3.

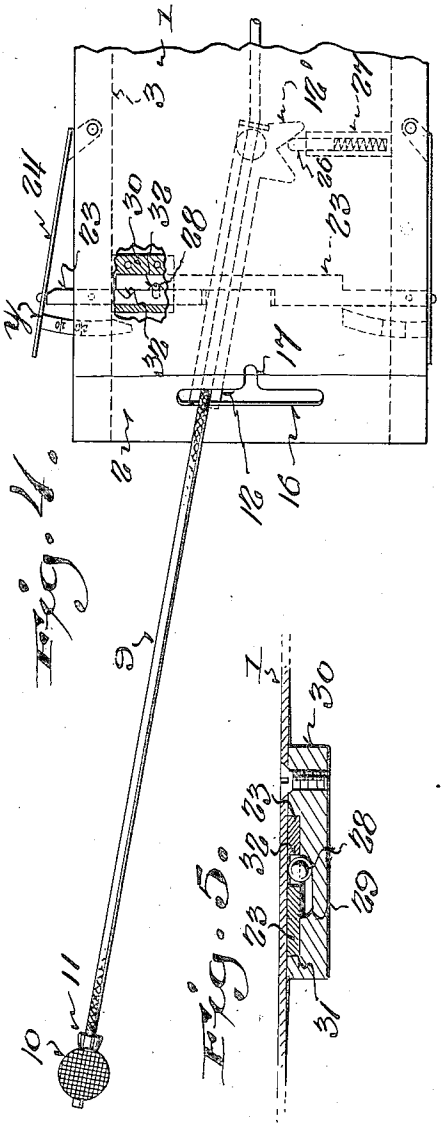


Fig. 4.

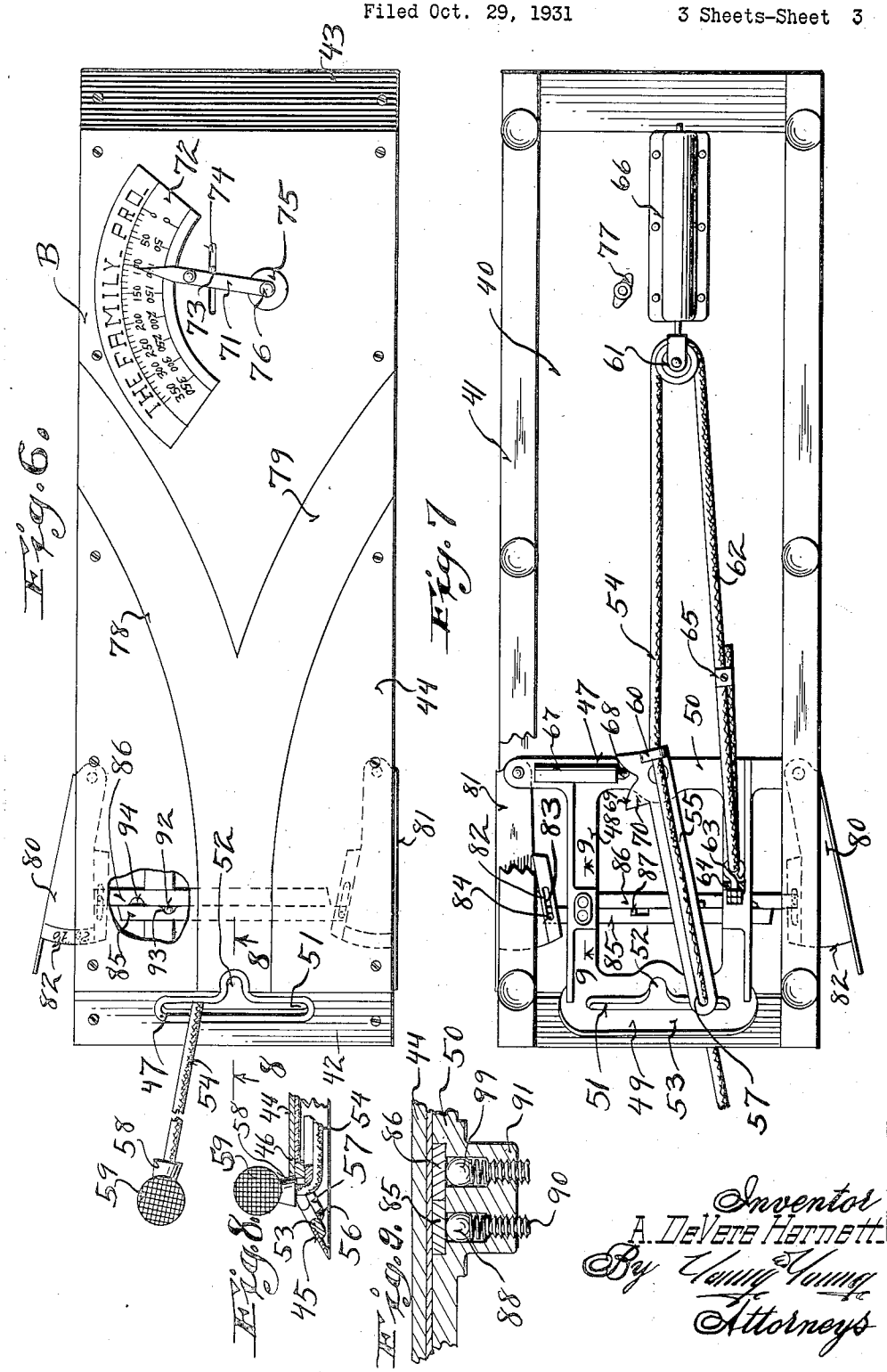
Fig. 5.

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July 17, 1934. A. DE V. HARNETT 1,966,960

GOLF BALL PRACTICE DRIVING APPARATUS

Filed Oct. 29, 1931 3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

1,966,960

GOLF BALL PRACTICE DRIVING APPARATUS

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Application October 29, 1931, Serial No. 571,828

6 Claims. (Cl. 273—35)

This invention relates to an apparatus to be used in practising driving of a golf ball, and has primarily for its object to provide a comparatively simple, inexpensive and positive device for accurately indicating the direction of flight of an anchored golf ball and the equivalent distance of drive were the ball driven in free flight.

Incidental to the foregoing, a more specific object resides in the provision of an apparatus of the foregoing character comprising a driving platform having a golf ball flexibly and yieldably connected thereto, together with means actuated by said connection for indicating the direction of flight of the ball and the equivalent distance of travel of the ball for the driving force exerted thereon.

Another salient object of my invention is the provision of novel means for connecting the ball, with the indicating device, said means embodying a structure of elastic cord having a fabric cover, whereby the cover will act as a holding means for the ball, in case the rubber strands of the cord become worn or broken incident to continued use of the apparatus, the cord being of a relatively long length, so as to prevent stretching thereof to its limit during the striking of the ball, so as to insure the longevity of the cord.

A still important object of my invention is the provision of novel means for indicating in degrees, the amount of the deflection of the ball, should the same be driven at an angle off of the platform, novel means being provided for engaging said indicating means, so as to prevent accidental operation of said means during the correct driving of the ball.

A further prime object of my invention is the provision of a novel seat on the forward end of the platform for receiving the ball or the supporting tee for the ball, so as to insure the proper return of the ball on the board, the board having its forward edge inclined and provided with a transverse slot for the cord, whereby the cord will have free motion to indicate the degree of hooking or slicing of the ball.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, in which:

Figure 1 is a plan view of a device to be constructed in accordance with the present invention;

Figure 2 is a side elevation;

Figure 3 is a bottom plan view, with parts broken away and in section;

Figure 4 is a fragmentary top plan, with parts broken away and in section;

Figure 5 is an enlarged detailed section taken on the line 5—5 of Figure 3;

Figure 6 is a top plan view of a slightly modified form of my invention, with parts thereof broken away to illustrate structural details;

Figure 7 is a bottom plan view of the modified form of my invention, with parts thereof broken away to illustrate details of construction;

Figure 8 is a fragmentary longitudinal section taken on the line 8—8 of Figure 6, illustrating the inclined front end of the driving board and the seat for the ball or its supporting tee;

Figure 9 is a detail section taken on the line 9—9 of Figure 7, showing the specific means for placing a drag on the deflection indicators, so as to prevent accidental movement thereof;

Figure 10 is a diametric section through the ball showing the knob and cord associated therewith;

Figure 11 is a view illustrating a modified form of ball with the tee formed integral therewith.

Referring now more particularly to the accompanying drawings, the numeral 1 indicates an elongated platform provided with beveled end portions 2, inclined downwardly. Secured to the bottom of the platform 1, adjacent its longitudinal edges, are runners 3 provided with suitably spaced supports 4, preferably in the form of vacuum cups, which prevent sliding of the platform when used upon smooth or polished surfaces.

Secured to the bottom face of the platform, adjacent its rear end, is an elongated housing 5 slotted at its forward end for reception of a sliding plate 6. The opposite end of the housing is similarly slotted for reception of an anchor plate 7 connected with the sliding plate 6 by means of a contractile coil spring 8. Suitably secured to the outer end of the sliding plate 6 is a resilient cord 9 which has secured to its outer end a conventional golf ball 10 having attached thereto a supporting tee 11, preferably formed of rubber to effect cushioning of the ball upon its return to the platform as will be hereinafter described.

I lay particular stress on the type of cord I use in connection with the ball, in that the same is provided with a safety woven cover, the use of which will be hereinafter more fully described.

As shown in Figure 3, the cord 9 is trained through an arm 12 pivotally mounted on the under face of the platform 1, the cord passing

through an ear 13 carried at the rear end of the arm and the longitudinal slot 14 formed in the free end of the arm, which is bent downwardly to conform to the front end of the platform. Both the front end 2 of the platform and the wearing plate 15 are provided with corresponding slots 16 which register with the forward end of the slot 14, while a notch 17 communicating with the slot 16 is normally longitudinally aligned with the slot 14 to receive the cord 9 and retain the ball in a normal central position on the platform, as illustrated in Figure 1.

In operation, the player is positioned at one side of the platform and merely drives the ball 10 forwardly from the platform. Inasmuch as the present invention is designed to indicate the direction of travel of the ball, and also the approximate distance of free flight of the ball proportionate to the driving force exerted thereon, an indicating device X is provided at the rear of the platform for indicating distance, while a pair of indicators Y, secured to opposite sides of the platform, serves to indicate the amount of deflection of direction of travel of the ball with relation to the longitudinal axis of the platform.

The distance indicator X comprises a pointer 18 pivotally secured to the top of the platform 2 and frictionally held in adjusted position by means of the spring 19. The platform is provided with a longitudinal slot 20 for reception of a vertical finger 21 carried by the sliding plate 6. In its normal position, the pointer 18 is rotated to engage the finger 21 positioned at the rear end of the slot 20, and when forward movement is imparted to the plate 6, as the result of driving the ball 10, the pointer is actuated to indicate upon the indicia 22 the distance of the drive in yards, which would result from the force exerted were the ball in free flight.

Obviously the distance indicator can utilize a compression spring, oil, water, or air pressure in lieu of the expansion spring shown, without departing from the spirit or the scope of this invention.

In order to indicate deflection resulting from what is known as "slicing" or "hooking", a pair of straps 23 are slidably mounted upon the lower face of the platform, each strap having its outer end loosely connected to a lever 24 pivotally carried by the platform and normally nested against the adjacent runner 3. The straps 23, which overlap one another, as shown in Figure 3, are each provided with a depending finger 25 positioned upon opposite sides of the arm 12, causing one of the straps 23 to be shifted outwardly upon movement of the arm 12 in that direction. As the strap 23 is shifted, the connected lever 24 is rotated outwardly, and the equivalent degree of deflection is indicated by indicia provided on the upper face of the arcuate fingers 25 carried by the free ends of the lever 24, thus showing the player the actual degree of either "hooking" or "slicing" of the ball during the drive.

In order to return the ball to its normal position after the drive, particularly when either "slicing" or "hooking" has occurred, the arm 12 is provided with a notched wing 12' engaged by a spring-urged plunger 26 carried in the bracket 27 secured to the upper face of the platform adjacent the wing. As the lever 12 is rotated in either direction, the plunger is cammed inwardly against the spring, which is comparatively light but of sufficient tension to return the arm to normal central position as the ball runs to its position on the platform above the notch 17. Obviously, after a drive, both the indicators Y and X must be manually reset for the next drive. However, prior to this, the distance of drive, as well as that of a "slice" or "hook" can be noted for the purpose of computing the player's score, should such method of play be desired. Furthermore, it will be quite obvious that where no scoring is contemplated, the indications enable the player to determine his faults as to form and distance.

In operation, after a drive has been made which may cause the arm 12 to be moved in one direction, lashing of the ball upon its return might cause the arm to swing in the opposite direction resulting in the actuation of both of the sliding straps 23. Therefore, in order to avoid this, a lock is provided, comprising a ball 28, positioned within a transverse slot 29 provided in the bracket 30, secured to the under face of the platform and further provided with a longitudinal recess 31 for slidable reception of both straps 23.

As best shown in Figures 3 and 4, the adjacent edges of the straps 23 are provided with notches 32 which are normally aligned with the slot 29 and with the ball 28. Obviously, as one strap is initially shifted, the ball will be cammed into the notch of the adjacent strap to lock the same against further movement until such time as the actuated strap is returned to its normal position. Thus, only the initial movement of the arm 12 is indicated upon the deflection indicators Y.

From the foregoing explanation considered in connection with the accompanying drawings, it will readily be seen that an exceedingly simple and inexpensive apparatus has been provided for practice driving of a golf ball either in-doors or out-doors, the ball being anchored and returned to driving position without manual operation. It will also be appreciated that exceedingly simple means have been provided for indicating both direction, and length of drive equivalent to the force exerted upon the ball. Attention is particularly directed to the manner of anchoring the ball and indicating distance of drive. Heretofore, extremely complicated and expensive apparatus has been employed for this purpose, which is accomplished in the present instance by the use of a flexible, resilient cord secured to an expansible spring. Thus, through the resiliency of the cord, free initial movement is imparted to the ball by the drive, permitting the same to acquire sufficient momentum to act upon the spring 8, thus enabling the indicator to more accurately gauge the approximate distance of drive equivalent to actual play.

Another novel and important feature embodied in the present invention resides in the mechanism for both indicating deflection and returning the ball to normal driving position, which mechanism includes the swinging arm 12 with the resilient cord trained therethrough to actuate the same, and through the transverse slot provided with a longitudinal notch, the notch serving to centrally position the ball upon its return, while the transverse slot allows a comparatively free deflection of the ball after the same has left the notch.

In Figures 6 to 9 inclusive, I have illustrated a slightly modified form of the invention, but the same includes all of the essential features of the first form, the improvements being primarily in the nature of refinements in order to add durability to the device and to insure proper operation thereof.

The second form of the invention is generally indicated by the reference character B and consists of an elongated flat platform 40 which can be constructed from sheet metal, if so desired. This platform is secured to a pair of spaced parallel longitudinally extending rails 41 which can be formed of wood if preferred. The ends of the rails are beveled and the platform has its terminals bent downwardly to provide the inclined front and rear ends 42 and 43.

Secured to the top face of the platform is a sheet of fibre or the like board 44, which terminates short of the inclined front and rear ends 42 and 43 of the platform. It is obvious, that this covering will deaden sound incident to the movement of the club thereover. The entire apparatus is suitably painted and otherwise treated, so as to enhance the appearance thereof to the purchasing public.

The inclined front portion 42 of the platform is provided with a transverse slot 45 and a centrally disposed longitudinal slot or notch 46. It is to be noted that the short central notch 46 is arranged in the horizontally disposed portion of the platform.

Centrally fastened to the lower face of the platform is a casting 47, which is provided for the purpose of reinforcing the front of the platform and for carrying certain operating parts of the device. As shown, this casting 47 embodies spaced parallel arms 48 and front and rear connecting bars 49 and 50. The rear bar 50 extends substantially to the sides of the platform and over the side rails 41. The front bar 49 is arranged at an incline to conform to the inclination of the front portion 42 of the platform, and the same is provided with a transverse slot 51 and a notch 52 for conforming to the slot and notch at the front of the platform. This casting is provided with a lip 53 which extends into the slot and notch for acting as a guide for the cord 54, which will be hereinafter more fully described.

Rockably connected to the central portion of the rear bar 50 of the casting is a swinging manipulating lever 55, the forward end of which is down-turned as at 56 and provided with a longitudinal slot 57 through which extends the cord 54.

By referring to Figure 8 of the drawings, it will be noted that the notch in the top board 46 forms a seat for receiving the tee 58 for the ball 59, and that the tee can rest upon the casting as a base therefor. The rear end of the lever is provided with a guide eye 60 through which the cord is threaded. The cord 54 extends from the ball 59 longitudinally of the platform and is trained about a pulley 61 and is then brought forwardly as at 62 and connected to a swivel eye 63. This swivel eye 63 is rotatably carried by an eye 64 formed on the casting. The swivel eye is in the nature of a bolt and can be adjusted by the use of suitable nuts threaded thereon.

It is to be also noted that the cord 54 is threaded through the swivel eye 63 and brought back upon itself to form an elongated loop which is connected to the length of the cord in any preferred manner, such as by the use of a band 65.

The pulley 61 is operatively connected to an expansion spring arranged in a housing 66, bolted or otherwise secured to the lower face of the platform.

The inner end of the casting carries a plunger housing 67 in which is arranged a spring-pressed plunger 68. This plunger 68 acts on the opposite inclined faces 69 formed on the right angularly extending arm 70 of the lever 55, and this plunger acts to normally hold the lever centralized on the lower face of the platform.

In order to indicate the force with which the ball 59 is struck, by a player, an indicator is provided. This indicator consists of a swinging indicating arm or pointer 71, which moves over a scale plate 72 carried by the top face of the platform. This scale plate is marked to indicate yardage and carries marking which can be read from either side of the platform, so as to render the same equally susceptible for use by right or left hand players. The pointer is moved over the scale plate by means of an operating finger 73 actuated in a slot 74 formed in the platform. The finger 73 is connected and operated by the expansion spring. A wear-washer 75 is placed on the top of the platform around the shaft 76 of the pointer and a tightening nut 77 is threaded on the lower end of the shaft 76.

I also preferably paint or otherwise arrange on the top surface of the platform, lines 78 and 79 which indicate to the player the correct swing of the club for directing the ball, it being obvious that the lines 78 and 79 are provided for right and left hand players.

Means is also provided for indicating the exact degree of deflection of the ball, should the ball be struck at an angle, instead of being given a straight drive. This means comprises indicating supports 80 and 81, which are pivotally connected to the terminals of the rear bar 50 of the casting. Formed on the supports 80 and 81 are indicating plates or segments 82 which are graduated in degrees. These indicating plates 82 extend through guideways in the side rails 41 and have their inner edges provided with slots 83 and pins 84 are utilized for connecting the central plates with inwardly directed arms 85 and 86. The arms are provided with operating lugs 87 which are arranged on opposite sides of the lever 55, so that the lever will operate said arms, and consequently the indicating pointers, should the lever be swung on its pivot incident to the driving of the ball.

To prevent accidental movement of the plates 85 and 86 incident to the ordinary driving of the ball, drags 88 are provided. These drags 88 consist of spring-pressed balls 89 which act on the rods 85 and 86. The tension of the springs can be adjusted by means of threaded plugs 90. As shown, the spring-pressed balls and the plugs 90 are carried by a boss 91 formed on the casting. In the first form of the invention, balls are carried directly by the side rails 41 of the platform. After actuation of either one of the devices for indicating the degree of deflection of the ball, the same are held against movement by means of a suitable ball lock 92 which is adapted to engage in notches 93 or 94 formed in the rods 85 and 86.

Obviously, the device is used in exactly the same manner as the device described in the first form, but the additional length of the cord 54 prevents the cord from being extended to its extreme amount, thereby insuring long life to the cord and preventing the easy breaking thereof.

In Figure 10, I have shown a rubber tee 58 which can be made separate from the ball, but if so desired, a tee 107 can be molded directly on the ball, as shown in Figure 11.

One of the important features of my invention is the fact that when the ball is struck, the cord

will ride into the transverse slot 51 which is arranged on the inclined front face 42 on the platform. This will allow free movement of the cord, so that the same will swing the lever 55 should the ball be struck at an angle. This permits the cord to indicate fully the exact degree of deflection of the ball.

The swivel eye 63 allows the cord 54 to untwist in case the ball twists the cord excessively.

In actual practice, I preferably provide a cover plate which is connected to the casting, so that the operative parts of the device will not be disclosed to view and so that the same will be fully protected from dirt and the like.

While the foregoing features are considered of great advantage in the practical application of the invention, it is to be understood that modifications as to details of construction are contemplated as coming within the scope of the appended claims.

I claim:—

1. A device of the class described comprising a platform, a ball normally positioned upon said platform, an arm pivotally carried by said platform, a resilient connection between said ball and platform, said connection engaging said arm, a pair of opposed indicating members engaged by said arm, and means actuated upon movement of each of said members to lock the adjacent member against movement.

2. A golf apparatus comprising a platform, a ball adapted to be driven from said platform, a resilient connection between the ball and platform, a swinging lever actuated by the cord when the ball is driven from the platform at an angle, and indicating segments arranged on opposite sides of the platform, and operated by the lever, graduated in degrees for indicating the degree of slice or hook imparted to a ball driven from the platform.

3. A golf apparatus comprising a platform, a ball adapted to be driven from said platform, a resilient connection between the ball and platform, a swinging lever actuated by the cord when the ball is driven from the platform at an angle, and indicating segments arranged on opposite sides of the platform, and operated by the lever, graduated in degrees for indicating the degree of slice or hook imparted to a ball driven from the platform, and resilient means for creating a drag on the indicators for preventing accidental movement thereof.

4. A golf apparatus comprising a platform, a ball adapted to be driven from said platform, a lever pivotally carried by said platform, a resilient connection between said ball and platform, said resilient connection engaging said arm, a pair of opposed indicating members engaged by said arm, said members being graduated in degrees, means actuated upon movement of each of said members to lock the adjacent member against movement and spring-pressed balls acting upon said indicating members for preventing accidental movement thereof incident to the straight driving of the ball.

5. A golf apparatus comprising a platform, a ball adapted to be driven from said platform, a lever pivotally carried by said platform, a resilient connection between said ball and platform, said resilient connection engaging said arm, a pair of opposed indicating members engaged by said arm, said members being graduated in degrees, means actuated upon movement of each of said members to lock the adjacent member against movement and spring-pressed balls acting upon said indicating members for preventing accidental movement thereof incident to the straight driving of the ball, and means for adjusting the tension of the spring-pressed balls.

6. In a golf apparatus a platform having its forward end arranged at an incline and provided with a transverse slot having a notch, a casting secured to the lower face of the platform having its front end inclined to conform to the inclination of the front of the platform and provided with a transverse slot and a central notch, a golf ball adapted to be driven from the platform, a tee for supporting the ball adapted to be received within the notch and to fit upon the casting, a swinging lever pivoted to the casting having a slot in its forward end and an eye in its rear end, a resilient cord anchored to the ball and threaded through the slot of the lever and said eye, means anchoring the other end of said cord to the platform, and indicating means operated by the lever for disclosing the degree of deflection of the ball incident to the movement of the lever.

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