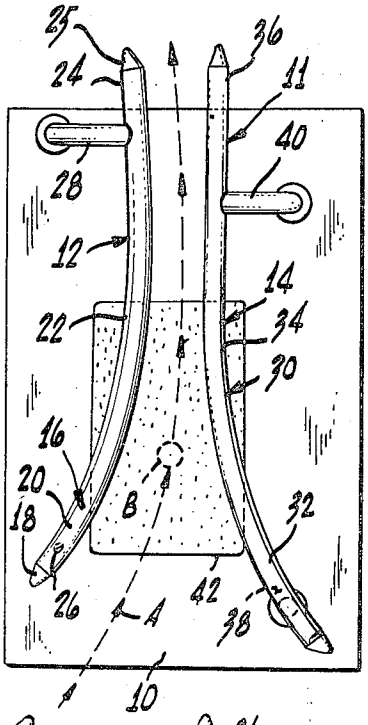
Dec. 9, 1969 S. H. GIBSON ET AL 3,482,838

GOLF SWING TRAINING DEVICE

Filed Dec. 21, 1967

Fig. 2.



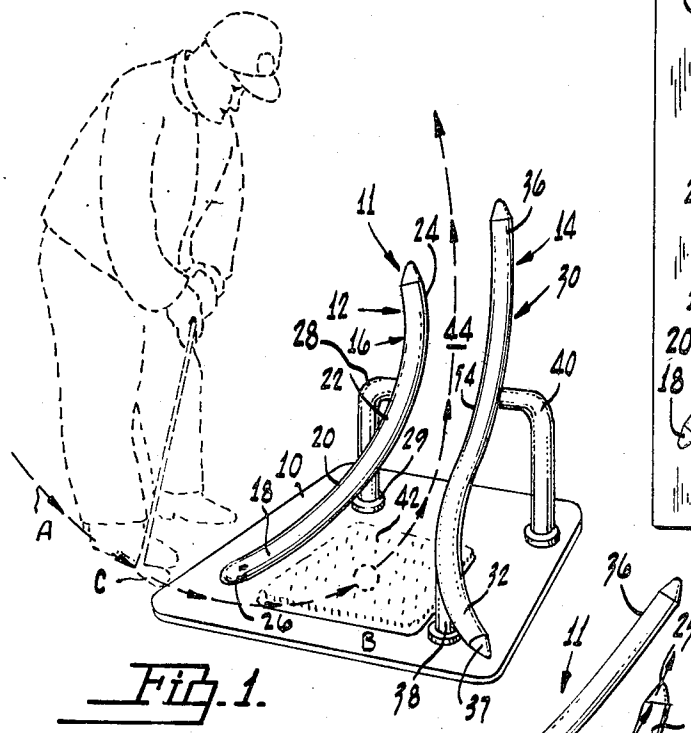


Fig. 1.

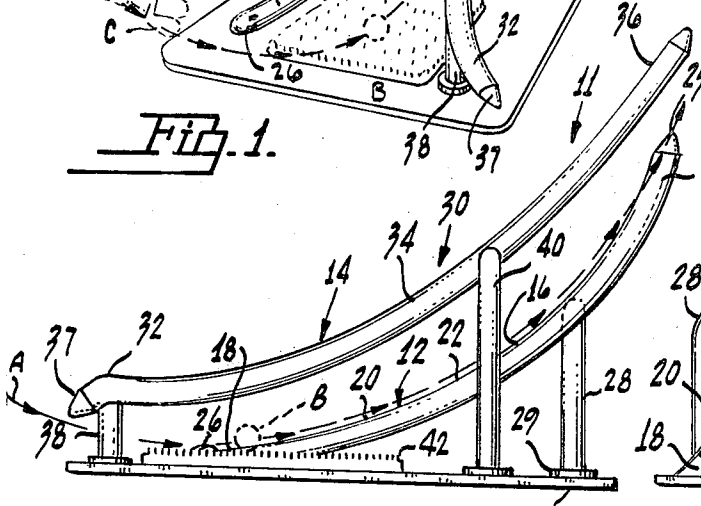


Fig. 3.

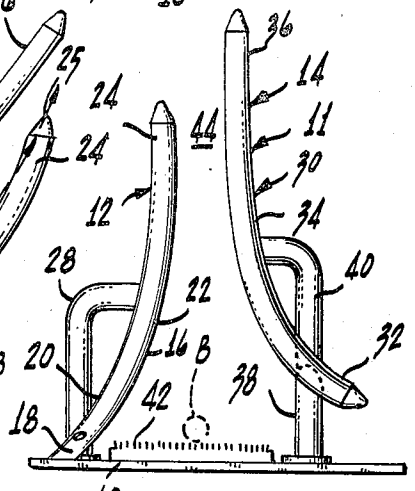


Fig. 4.

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GOLF SWING TRAINING DEVICE

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Continuation-in-part of application Ser. No. 626,915, Mar. 27, 1967. This application Dec. 21, 1967, Ser. No. 694,353

Int. Cl. A63b 69/36

U.S. Cl. 273—186 9 Claims

ABSTRACT OF THE DISCLOSURE

A device for training a golfer to swing correctly, including a pair of stationary guide rails mounted on a base to define between them a correct path for the golf swing. The rails start near the bottom of the golfer's downswing, a short distance rearwardly of the ball position, and are inclined forwardly upwardly to extend past the point of impact and well into the follow-through. The relative curvature, spacing, elevation, and length of the rails is selected to assure the retention of the club in the path known to produce maximum assurance of a correct hit.

CROSS-REFERENCE TO RELATED APPLICATION

The present application is a continuation-in-part of our pending application Ser. No. 626,915 filed Mar. 27, 1967, now abandoned.

BACKGROUND OF INVENTION

Field of invention

The invention pertains to the field of equipment for attaining proficiency in a given sport, in particular, golf. Specifically, the invention is in the field of golf training or practice devices of the type including a club guide means defining a path within which the club travels when swung correctly.

Description of the prior art

The prior art teaches the concept of one or more fixedly mounted members intended to indicate a proper path of movement to be taken by the club when correctly swung. Typical among patents in which this concept is found are the following: Glennon et al., 1,637,339; Ellington, 2,249,038; and Plunkett et al., 2,713,491. The art, however, has failed to develop and make meaningful use of exact, scientifically developed information with respect to the critical portion of the golf swing arc. In the absence of such information, the prior art devices in some instances have failed to solve swing problems except possibly in haphazard fashion. Or, in some instances the equipment found in the prior art has been effective to correct some swing faults, but has been ineffective in correcting other faults of equal or possibly even greater importance.

The deficiencies or failings of the prior art devices, accordingly, have been such that a truly effective golf swing training device of simple, inexpensive, rugged construction is still lacking. As a result, to our knowledge there has not heretofore been devised a training device of this nature that has found anything other than a comparatively limited commercial acceptance. This is the problem, if it can be called such, that we have intended to solve by the present invention.

SUMMARY OF THE INVENTION

In our efforts to improve, by novel and effective means, upon the prior art, we have devised a golf swing training device including a flat base upon which may be disposed a ball positioning means such as a fiber mat, rubber tee, or the like. Fixedly mounted upon the base is a guide rail assembly, comprising an inner and an outer guide rail. These are transversely spaced so as to define between them a swing path through which the club head will travel when describing a correct swing arc.

The rails are so formed, are of such length, and are so positioned in respect to each other as to make maximum, truly effective use of scientifically developed information as to the critical portion of the swing path. To this end, the invention, summarized briefly, includes a pair of guide rails mounted upon the base, one of which rails at its rear end is in direct contact with the base, this being the inner guide rail, the inner end of the other (outer) guide rail being spaced upwardly from the base so as to be displaced or offset upwardly in respect to the first guide rail. The guide rails converge for a portion of their lengths, in a forward direction, to provide a tapering entranceway for the club while it is in movement through its swing path. Then, the rails are extended for a further distance substantially in parallel relation, and at their forward ends diverge slightly.

The rails are inclined forwardly, upwardly along curving paths, and of importance is the fact that the rail assembly starts at a location angularly spaced from the point of impact with the ball to the extent of approximately 15°. The rails continue on into the follow-through portion of the swing, for an angular distance of approximately 45° from the point of impact to the forward extremity of the rail assembly.

BRIEF DESCRIPTION OF THE DRAWING

FIGURE 1 is a perspective view of a golf swing training device according to the present invention, as it appears when in use, the directional arrows indicating a correct swing arc or path;

FIGURE 2 is a top plan view of the device, in which the directional arrows again indicate the proper swing arc;

FIGURE 3 is a side elevational view of the device, the directional arrows showing the swing arc; and

FIGURE 4 is a rear end elevational view.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Mounted upon a flat, rectangular base **10** is a guide rail assembly generally designated **11**, comprising an inner guide frame and an outer guide frame designated **12**, **14** respectively.

Considering first the construction of the inner guide frame **12**, this includes, as the main component thereof, an elongated inner guide rail **16** which in a preferred commercial embodiment would be formed of a rugged material that would not damage or mar the shaft or head of a golf club that might strike the rail during use of the equipment by reason of being swung through an incorrect swing path. We have found, in this regard, that polyvinyl chloride is well suited for the intended purpose, being readily formed to the desired shape, strong, waterproof, and weatherproof. This material does not mar a golf club by reason of the fact that the surface of the guide rail yields under the force of impact by a club. Yet, the material used for the guide rail is rugged enough to resist breakage or deformation if struck by a club.

In any event, as seen particularly from FIGURE 2, showing the inner rail in top plan, said inner rail when viewed in plan is gently curved in a longitudinal direction, and has a rear end portion **20** which starting at the rear extremity of the inner rail is curved gently in a forward direction, extending in converging relation to the longitudinal center line of base **10**. Rear end portion **20** merges into an intermediate portion **22** which is a continuation of the rear end portion, and thus curves

gently in the forward direction, with the space between the inner guide rail and the longitudinal center line of the base **10** being decreased slightly. Then, the intermediate portion merges into a forward end portion **24**, which as shown may be provided with a generally conical cap **25**. The forward end portion, by reason of the continuing curvature of the rail, diverges slightly from the longitudinal center line of the base **10**, when viewed in top plan as in FIGURE 2.

The inner guide rail is fixedly mounted upon the base, and to this end, the rear extremity thereof may be flattened, and is secured in direct contact with the surface of the base, by means of screw **26** or equivalent fastening means. Other than at the flattened rear end, the inner rail is of circular configuration, in a preferred embodiment, so as to eliminate sharp corners.

Referring now to FIGURE 3, the inner guide rail is inclined forwardly upwardly from its rear end, terminating at its front end forwardly of the base **10**, in a typical commercial embodiment. The front end of the inner guide rail, in such embodiment, would terminate at an elevation approximately at or just below the hips of a golfer of average height.

Supporting the forward portion of the inner guide rail in its inclined position is a support leg **28**, which can be of metal pipe stock in a typical embodiment, but in any event, is of inverted L shape (see FIGURE 4), being fixedly secured at its upper end to the rail **16**, and being provided at its lower end with a flanged foot **29** screwed to the base **10** or otherwise fixedly attached to the base. The support leg is disposed wholly exteriorly of the swing path defined between the inner and outer guide rails so as to assure against accidental striking of the support leg by the club.

Considering the construction of the outer guide frame **14** of the guide rail assembly **11**, this includes an outer guide rail **30** which when viewed in top plan as in FIGURE 2 includes a rear end portion **32** of gently curving configuration, merging into an intermediate portion **34** which initially is a continuation of the curvature of the rear end portion, thereafter becoming straight and parallel to the longitudinal center line of the base. Intermediate rail portion **34** merges at its front end into a front end portion **36** which in top plan is substantially straight, in extension of the straight part of intermediate portion **30**.

The outer guide rail is greater in length than the inner guide rail, the respective ends of the outer rail terminating beyond the corresponding ends of the inner rail as clearly shown in FIGURES 1 and 3. Like the inner guide rail, the outer rail is inclined forwardly upwardly, and when viewed in side elevation as in FIGURE 3, is curved continuously for its full length, except for the provision of a depending cap portion **37** at its rear end.

The outer guide rail, thus, cooperates with the inner rail in defining a swing path through which the club C passes when swung correctly. We have found, in this regard, that it is of importance, in achieving maximum efficiency with the equipment, to offset the outer rail upwardly from the inner rail, for the full length of said outer rail, as clearly shown in FIGURE 3. Thus, at its rear end, the outer rail, rather than lying flat against the base **10** as is true of the rear end of the inner rail, is connected to the base in spaced relation thereto, through the provision of a short rear support leg **38** fixedly connected between the rear portion **32** and the base **10**. Intermediate its ends, the outer rail is fixedly secured to the upper end of a front support leg **40** of inverted L shape, the lower end of which is affixed to base **10**. Leg **40** extends laterally outwardly from the outer rail so as to be completely out of the path of a club head swung between the rails.

The arrangement of the rails is such that starting at the rear ends thereof, they converge along oppositely curved lines to define a tapered entranceway for the club head as it is swung through a correct swing arc A shown in dotted lines and by directional arrows in the drawing. Within said entranceway, the ball B may be positioned, upon any suitable ball-supporting means that will prevent damage to the club, as for example a fiber mat **42** secured to the top surface of the base **10**.

At the narrower forward end of the entranceway, the relationship of the rails changes from one of convergence to one in which the rails are in substantially parallel relation. At this point, the space between the rails is on the order of 8 to 10 inches, more or less. Then, at the forward end of the space or path **44** through which the club head moves, the rails diverge slightly by reason of the fact that the inner rail continues along a curved path, now moving away from the longitudinal center line of the base, while the forward end portion of the outer rail remains substantially in parallel relation to said longitudinal center line.

In use, the golfer stands as shown in FIGURE 1, to one side of the base, and the ball may be positioned as desired upon the mat or other ball support means used. At this point, it may be observed that different golfers may tend to position the ball differently in respect to their feet, and in fact, the ball position changes in respect to the feet, according to the particular club being used.

It is also true that the point of impact with the ball along the swing arc A varies according to the club being used and perhaps to a lesser degree, according to the swing habits of the particular golfer. By this, we mean that if one is hitting the ball with a driver, most teachers hold that the ball should be hit at the lowermost point of the swing arc, or perhaps just as the club head moves past the lowest point of the swing arc during the downswing. If, however, one is using one of the middle irons, as for example a 6-iron, the approved way of hitting the ball is to strike it on the downswing, just before the club head reaches the lowest point of the swing arc.

For clarity of understanding, accordingly, the word "point of impact" and "lowest point of swing arc" shall be considered as meaning the same thing in this description and in the claims, merely to provide a reference point from which one can consider the forward or rearward extension of the guide rails along the swing arc.

As will be apparent, the golfer seeks to swing the club through the device without contacting either of the rails or arms of assembly **11**. If the golfer does swing the club through the device in this manner, he will be swinging along a path known to be that which will produce, with maximum consistency, straight, well hit shots.

In this connection, we devised the particular shape, location, length, and relative arrangement of the guide rails after taking and studying many thousands of feet of slow motion films of professional golfers. We found, by careful and scientific examination of said films, that although the backswing of the professional golfers was found to vary considerably, all swings of golfers having a high degree of proficiency are virtually the same from a point approximately 17° along the swing arc from the point of impact (herein referred to alternatively as the lowermost point of the swing arc), to a point 47° along the arc beyond said impact point.

The assembly **11**, thus, extends through this critical portion of the swing arc, and the particular shape of the rails illustrated and described herein has been found to produce a valuable training aid that prevents slicing and hooking. The inner rail is so curved, inclined, and arranged as to prevent the golfer, as he moves into the follow through, from "finishing flat" that is, from turning over his wrists and swinging the club in a "flat" swing plane across the front of his body perhaps waist-high or chest-high. This "flat" finish, as is well known, often occurs as part of an "inside-out" slicing swing.

It is also true that some golfers swing "inside-out" to an excessive degree, often as they sway rearwardly and "fall away from the ball." The outer rail is particularly formed and arranged to correct this fault, and it has been found desirable that it extend upwardly beyond the upper end

of the inner rail, to assure to the maximum extent against the golfer's continuation of this particular swing fault.

The correct swing arc is in an inclined plane, which remains more or less constant throughout the swing, and viewing the arc in the lower area thereof directly from above (as in FIGURE 2), one sees that the golfer swings the club head into the ball along an "inside-out" path, meeting the ball at the point where the club head moves in a straight line directly towards the target, and then begins to move back to the inside. In other words, a straight line drawn between the ball and the target is tangent to the swing arc.

We have found, by our extended research into the golf swing, that from the point of impact, the critical part of the swing is 17° from said point before striking the ball, and 47° beyond the point of impact after the ball is struck. If the club head is moving in the proper path along this angular distance, the likelihood of the ball being hit properly is at its greatest.

It is recognized, in this regard, that directing the club head along a proper path as it moves into the follow-through is definitely of great importance, and this practice is often called "extension," in the sense that the golfer is supposed to think in terms of extending the arms straight toward the target and throwing the club head up along the path toward the target. It will be observed from FIGURES 2 and 4 that the path or space **44** between the rails is, in fact, almost straight in longitudinal alignment with the path toward the target, in this critical area of the swing. Therefore, if the player swings the club properly, along the path shown in dotted lines, the club head will in fact move for a substantial distance in a path along the target, before returning to the inside. This prevents the player from having the aforementioned "flat finish," as well as the excessive "inside-out" finish found to be equally undesirable.

What is claimed is:

1. A golf swing training device comprising:

a flat base and a rail assembly including inner and outer elongated guide rails having first lower ends and second elevated ends, said guide rails being fixedly mounted upon the base and spaced apart transversely a distance such that a golf club swung by a user is free to pass therebetween, the first lower ends of said rails being disposed adjacent said base and said rails curving for a part of their lengths from said first lower ends toward said second elevated ends to define a converging entranceway of gradually diminishing width therebetween for a golf club in movement through its downswing, each of said rails being further upwardly curved from said first lower ends to said second elevated ends, the lengths of said rails and the relative heights of said first and second ends being such that the first lower ends of said rails define a position adjacent the lowermost part of a golf club swing arc and the second elevated ends define a position in the area of the follow-through part of a golf club swing arc.

2. A golf swing training device as in claim **1** wherein said rails extend toward said second elevated ends in approximately parallel relation from their point of greatest convergence to locations in close proximity to said second elevated ends.

3. A golf swing training device as in claim **2** wherein the space between said rails gradually increases from said point of greatest convergence towards said second elevated ends.

4. A golf swing training device as in claim **2** wherein the outer rail is displaced upwardly in respect to the inner rail.

5. A golf swing training device as in claim **4** in which the lower end of the inner rail lies substantially in the plane of the base.

6. A golf swing training device as in claim **5** wherein the upward displacement of the outer rail in respect to the inner rail occurs over the full length of the rails.

7. A golf swing training device as in claim **6** wherein the outer guide rail is greater in length than the inner guide rail so that the ends of the outer rail extend beyond the corresponding ends of the inner rail.

8. A golf swing training device as in claim **2** wherein the guide rails extend an angular distance of approximately 17° of a golf club swing arc from their first lower ends to an elevated position above an area on said base where a golf ball may be teed.

9. A golf swing training device as in claim **8** wherein the guide rails extend from said elevated position above an area on said base an angular distance of approximately 47° of a golf club swing arc to said second elevated ends.

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U.S. Cl. X.R.

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