Sept. 20, 1971 R. H. TILLER 3,606,340

PRACTICE GOLF DEVICE

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Fig.1

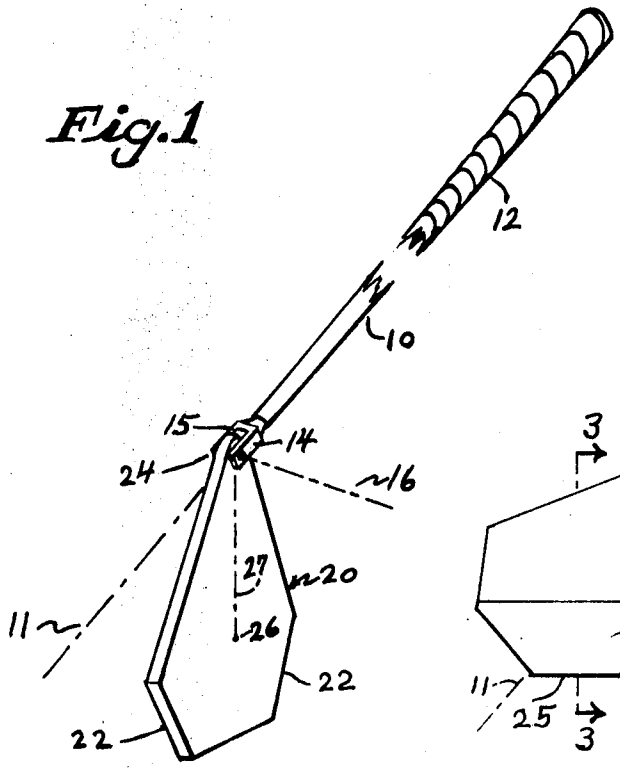


Fig.2

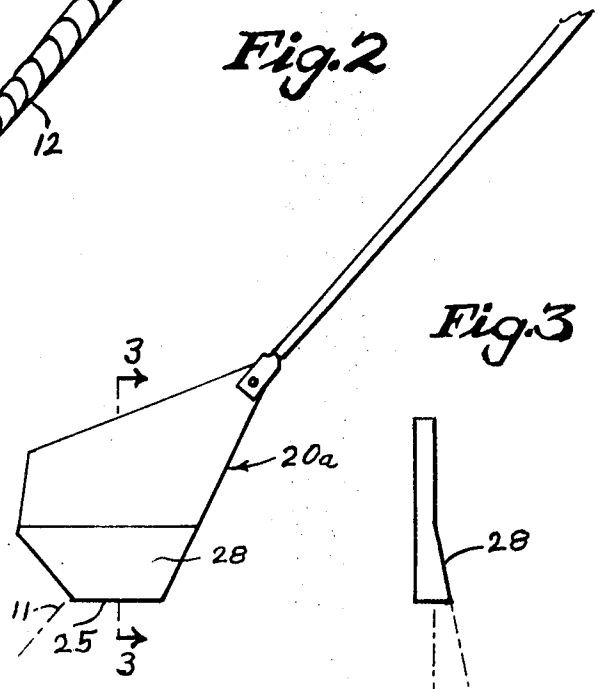
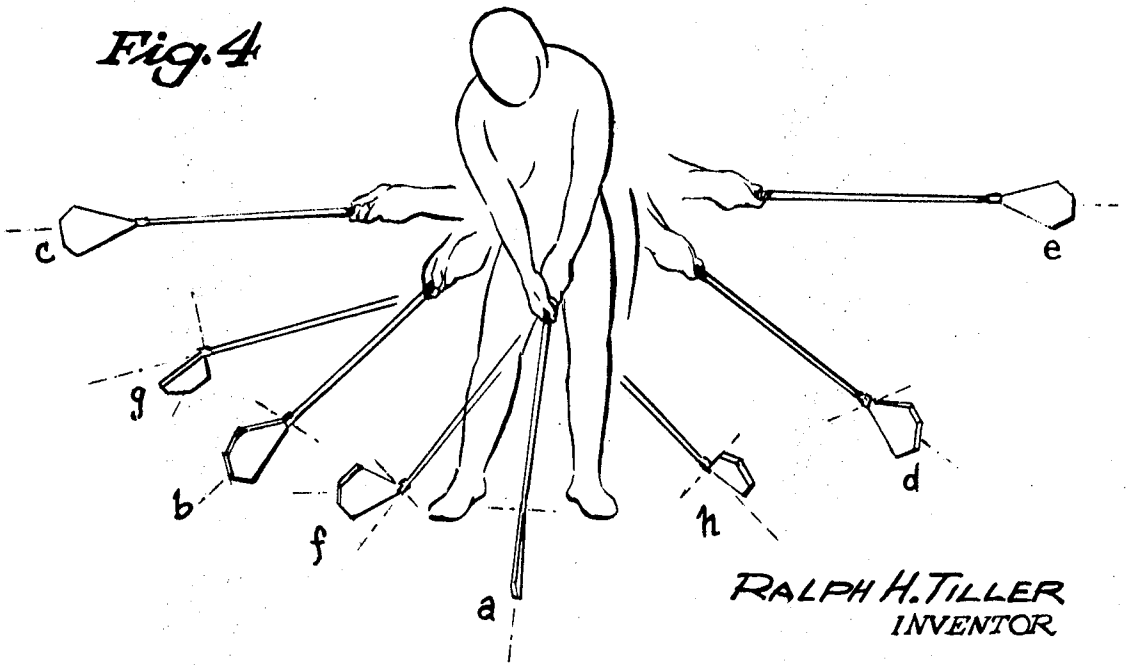


Fig.3

Fig.4



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Fig. 6

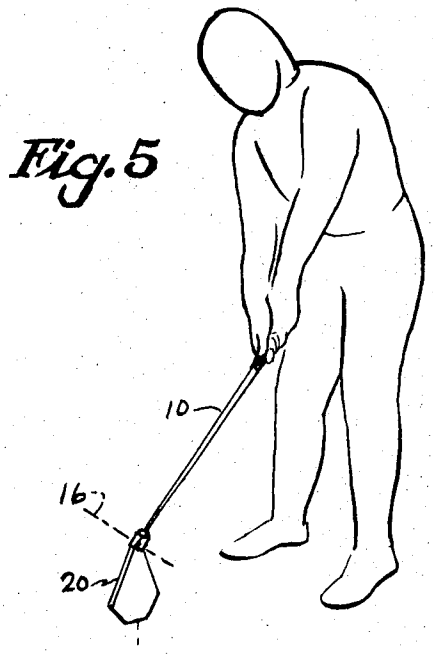


Fig. 5

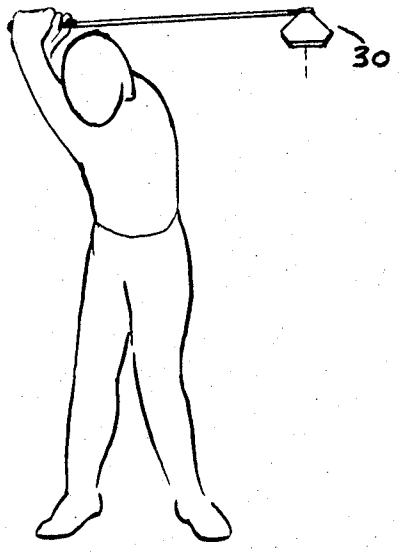
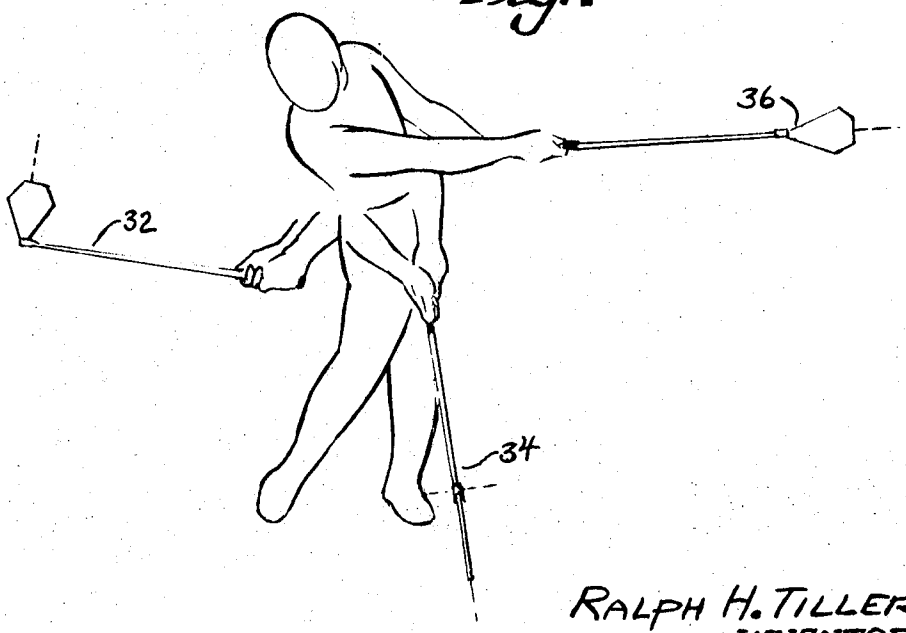


Fig. 7



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United States Patent Office 3,606,340
Patented Sept. 20, 1971

3,606,340

PRACTICE GOLF DEVICE

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Filed Feb. 13, 1970, Ser. No. 11,260
Int. Cl. A63b 69/36
U.S. Cl. 273—186A 4 Claims

ABSTRACT OF THE DISCLOSURE

A golf "club" for practice swings has the usual club head replaced by a mass eccentrically pivoted for free swinging movement on a pivot axis perpendicular to the length of the shaft and parallel to the swing direction. The mass is freely swingable through a range of positions that include the position wherein the center of gravity of the mass is aligned with the shaft. The mass may take the form of a flat blade and it may include a lofted portion which can be used effectively for hitting a golf ball. Certain swing errors are signalled to the player by dynamic reaction of the mass.

This invention has to do with practice apparatus for use by a golf player for improving his swing.

The invention is intended especially for improving hand and wrist action during middle and long distance swings. This is accomplished by means of a practice club having a head structure that is dynamically responsive to the nature of the swing movement, signaling certain swing characteristics to the player through the feel and sight of that dynamic action.

More particularly, the practice club has essentially the same feel as a regular rigid club during a properly executed swing, but gives an abrupt twist or slap in response to certain errors, such as jerky movement, incorrect swing path, or improper timing of the wrist action. Whenever such an error occurs the golfer receives a reminder of trouble and a clue as to its proper correction. The present device is intended primarily for practice swings, and is not ordinarily used for hitting an actual ball.

The device of the invention comprises a shaft similar to a regular golf club shaft, but having a dynamic mass freely pivoted at its end in place of the usual rigid club head. The center of gravity of the pivoted mass or blade is offset radially from the pivot axis, which is substantially perpendicular to the length of the shaft. The shaft is so gripped that the pivot axis is parallel to the direction of swing as the practice club passes through the normal impact point.

A full understanding of the invention, and of its further objects and advantages, will be had from the following description of illustrative manners of constructing the practice device and of employing it for improving swing technique.

In the accompanying drawings:

FIG. 1 is a perspective representing an illustrative practice device in accordance with the invention;

FIG. 2 is an elevation representing a modification;

FIG. 3 is a section on line 3—3 of FIG. 2;

FIG. 4 is a perspective representing a player in typical positions during preliminary practice movements; and

FIGS. 5 to 7 are perspectives representing a player employing the device during a practice swing, FIG. 5 in address position, FIG. 6 at the top of the swing, and FIG. 7 during downswing, impact and follow through.

In FIG. 1 a club shaft is represented at **10** with the longitudinal axis **11** and with the conventional handle grip **12** at its upper end. The lower end of the shaft carries a clevis structure **14**, comprising the two spaced parallel arms **15** which define the pivot axis **16** extending transversely and preferably perpendicularly with respect to shaft axis **11**. The dynamic member **20** is pivotally mounted on the shaft for free swinging movement about pivot axis **16** within the limited angular range permitted by the clevis structure. That angular range includes the position axially aligned with shaft axis **11**, as well as ample angles on each side of that aligned position, typically at least 90° and preferably about 135°.

Dynamic member **20** may have substantially any desired form which permits convenient suspension on pivot axis **16** with the center of gravity of the member radially spaced from that axis by a distance comparable to the member dimensions. As shown illustratively in FIG. 1, member **20** comprises a flat plate having the general form of an isosceles triangle with the base corners cut off at **22**. Member **20** is suspended with pivot axis **16** close to the vertex **24** of the triangle and perpendicular to the plane of the member. The center of gravity **26** of the dynamic member or blade is then radially spaced from pivot axis **18** with the radius **27** typically considerably more than half the total length of the member.

Dynamic member **20** may have substantially any desired shape, so long as it is capable of pivotal suspension eccentrically with respect to the center of mass, and so long as its form indicates clearly to the player the intended direction of swing, which is parallel to the pivot axis. The flat form of the plate member **20** of FIG. 1 defines unmistakably the direction of the pivot axis, which is perpendicular to the plane of the plate, thus facilitating correct address position with the pivot axis parallel to the direction of swing (FIG. 5). It will be evident, however, that many other forms of dynamic member can give the player clear visual indication of the pivot direction.

FIG. 2 illustrates a relatively slight modification of the dynamic member of FIG. 1, whereby the simplicity and ease of alignment of that member are retained, while providing a striking face that can be used effectively for hitting an actual ball. That face is formed on dynamic member **20***a* as an oblique surface **28** with a suitable loft angle **29** such as 13 degrees, for example. The lower edge **25** of member **20***a* is preferably designed to be parallel to the ground at impact during a normal swing. Much of the flat plate at the upper left of member **20***a* as seen in FIG. 2 may be cut away if desired, simulating more fully the appearance of a regular club head. By observing the resulting flight of an actual ball, the player may more readily learn to associate the distinctive feel of the club with various stroke characteristics.

In operation, the "club" is grasped with the pivot axis **16** parallel to the direction of swing at the point of impact. When the club is held stationary at address position, as in FIG. 5, dynamic mass **20** hangs vertically below its suspending pivot, and is just clear of the ground. The club may then be "waggled" in conventional manner (FIG. 4), gradually increasing the arc until the hands swing above hip height. If the movement is kept smooth with no independent hand action, centrifugal force will maintain the blade extended substantially in axial alignment with the shaft, as at *b*, *c*, *d* and *e*. Any jerky movement, wrong use of the hands, or movement in an irregular or incorrect path will cause the blade to slap about its pivot, as at *f*, *g* and *h*. Such action is felt by the player, signaling the error.

During a full swing the blade typically swings over at the highest point of the swing, pointing generally toward the ball as at **30** in FIG. 6. As the downswing commences, centrifugal force increases gradually, tending to rotate the blade toward axial alignment with the shaft. Such alignment is typically only partially attained at the position indicated at **32** in FIG. 7. Between that point and

the impact position **34**, wrist action brings the blade pivot axis gradually parallel to the direction of swing. Until that condition is attained, acceleration of the club along the swing direction produces a transverse force component tending to swing the blade away from alignment with the shaft. When a swing is correctly executed, the progressively increasing centrifugal force and the progressively decreasing transverse force component brings the blade into fully aligned position smoothly and without any slapping action. The blade should be fully aligned with the shaft at impact position **34**, and should maintain such alignment well into the follow through, as shown at **36** in FIG. 7.

Such swing errors as improper timing of the wrist action, incorrect swing path, or jerky movement at any point of the swing tend to produce erratic rotation of the blade about its pivot axis. Such rotation is visible to the player, and may also be felt as a slapping or fluttering of the blade, immediately signaling the error. With practice the player is able to diagnose the nature of the error from the detailed feel of the club, progressively improving his swing technique.

I claim:

1. A practice golf device comprising in combination

a shaft having a hand grip at one end and having the general characteristics of a golf club shaft,

structure at the other end of the shaft defining a pivot axis substantially perpendicular to the length of the shaft,

and a blade member mounted on the shaft for pivotal movement about the pivot axis with the center of gravity of the blade member offset radially from the pivot axis, the form of the blade member indicating a direction of swing parallel to the pivot axis,

the blade member being freely swingable through an angular range that includes the position in which the radius to the center of gravity is aligned with the shaft.

2. A practice golf device as defined in claim **1**, and in which said blade member is of generally plane configuration with its plane perpendicular to the pivot axis.

3. A practice golf device as defined in claim **2**, and in which said blade member includes a boss structure on one face thereof forming a ball striking face that is oblique with respect to the plane of the member.

4. A practice golf device as defined in claim **1**, and in which said structure defining a pivot axis comprises a clevis rigidly mounted at said other end of the shaft and aligned therewith.

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GEORGE J. MARLO, Primary Examiner

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