Jan. 13, 1970 J. A. MARK 3,489,416

GOLF SWING PRACTICE MEANS

Filed June 19, 1967 7 Sheets-Sheet 1

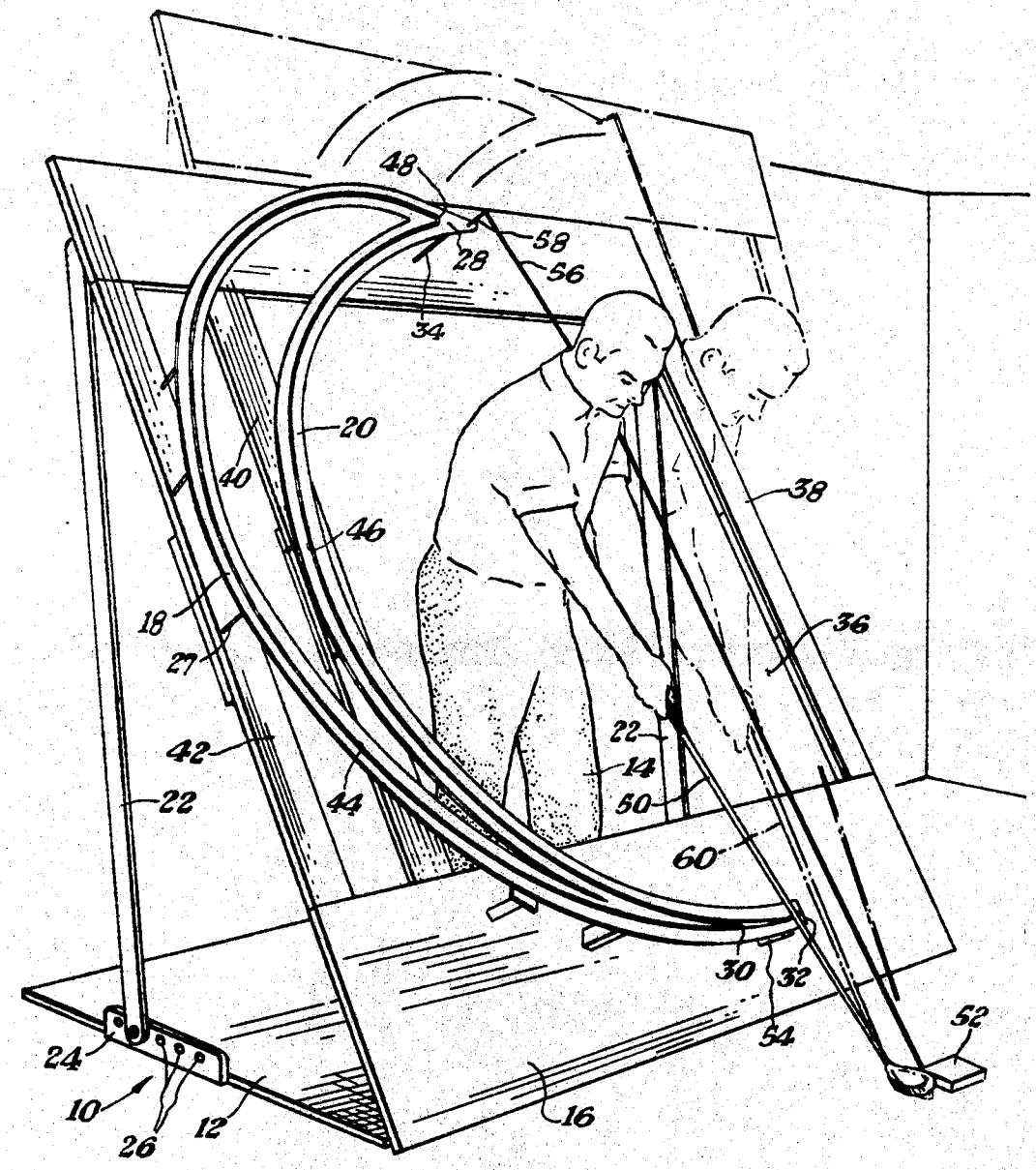



Fig. 1.

INVENTOR
Joseph A. Mark
BY
Buell, Blenko & Ziesenheim
HIS ATTORNEYS

Jan. 13, 1970 J. A. MARK 3,489,416

GOLF SWING PRACTICE MEANS

Filed June 19, 1967 7 Sheets-Sheet 2

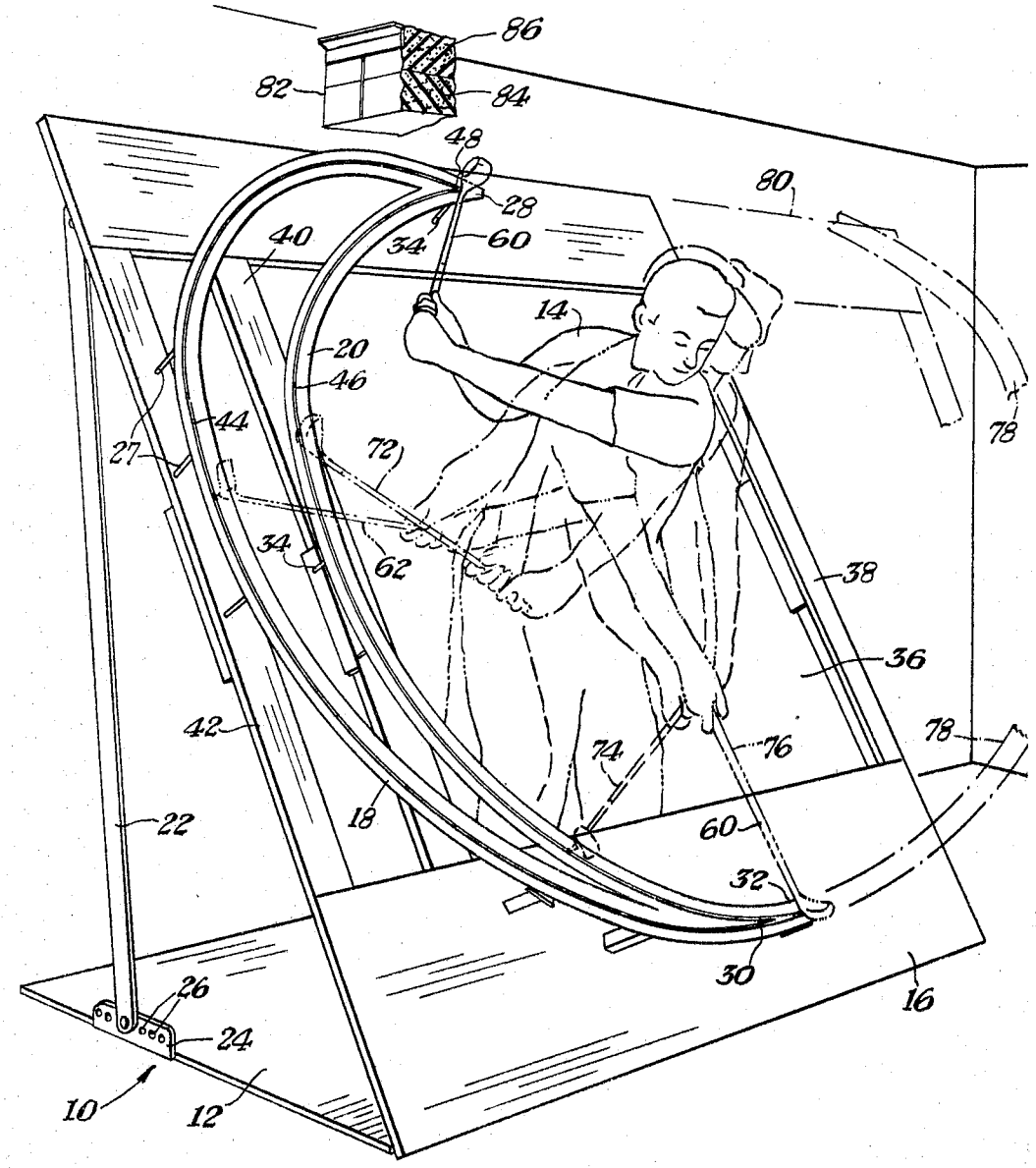



Fig. 2.

INVENTOR
Joseph A. Mark.
BY
Buell, Blenko & Zeuschein
HIS ATTORNEYS

Jan. 13, 1970 J. A. MARK 3,489,416

GOLF SWING PRACTICE MEANS

Filed June 19, 1967 7 Sheets-Sheet 3

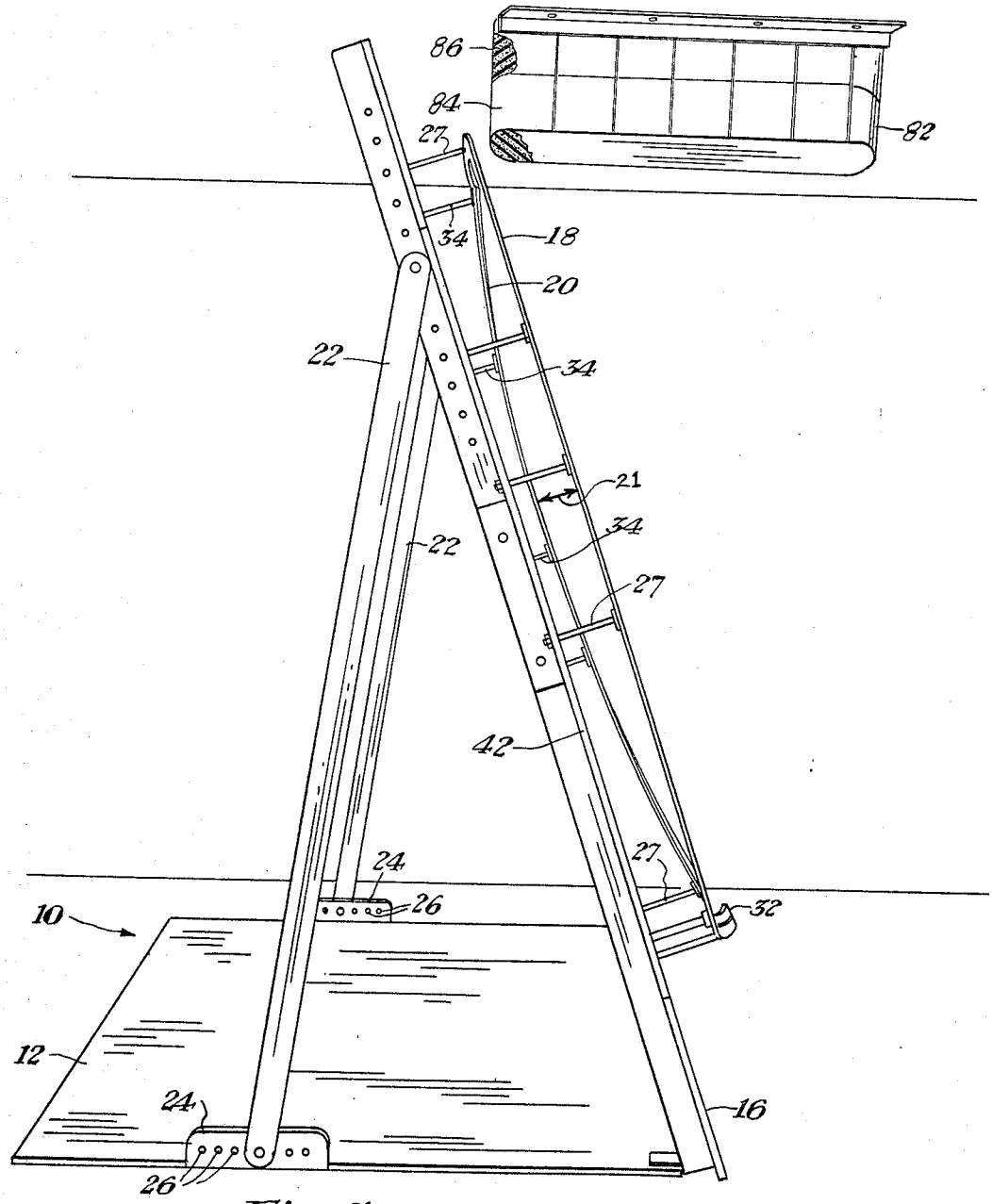



Fig. 3.

INVENTOR
Joseph A. Mark
BY
Buell, Blenko & Ziesenheim
HIS ATTORNEYS

Jan. 13, 1970 J. A. MARK 3,489,416

GOLF SWING PRACTICE MEANS

Filed June 19, 1967 7 Sheets-Sheet 4

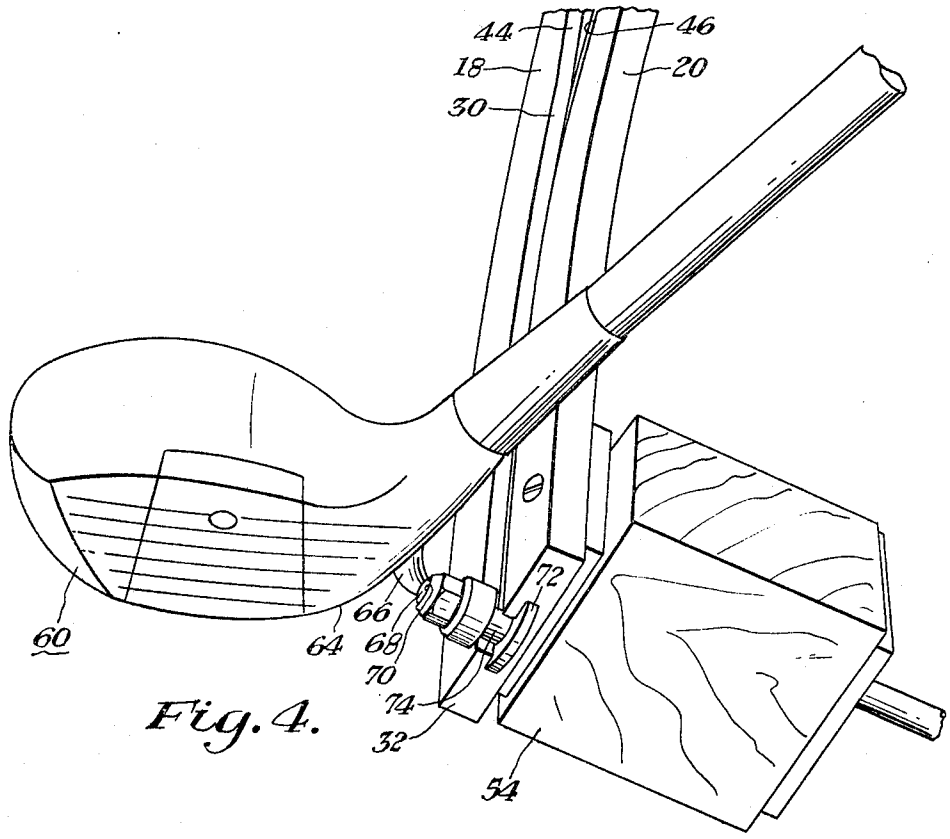



Fig. 4.

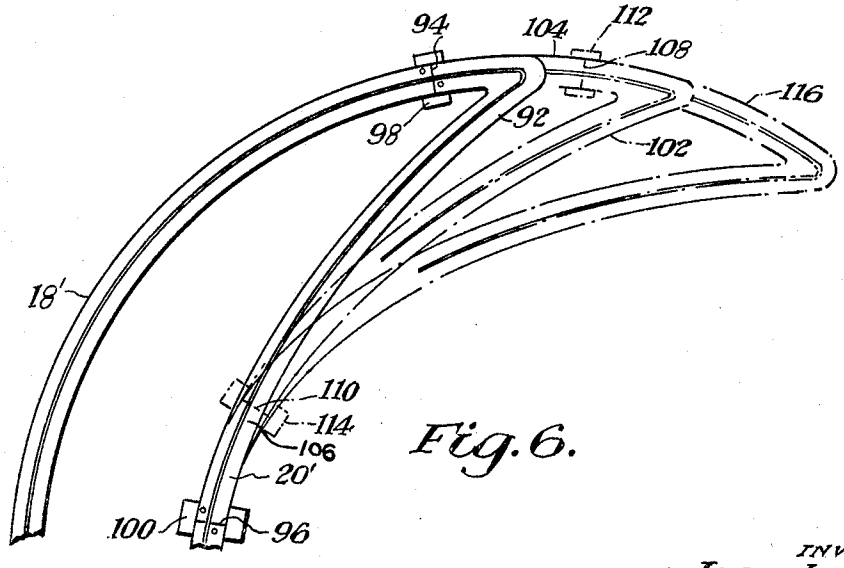



Fig. 6.

INVENTOR
Joseph A. Mark
BY
Buell, Blenko & Ziesenheim
HIS ATTORNEYS

Jan. 13, 1970 J. A. MARK 3,489,416

GOLF SWING PRACTICE MEANS

Filed June 19, 1967 7 Sheets-Sheet 5

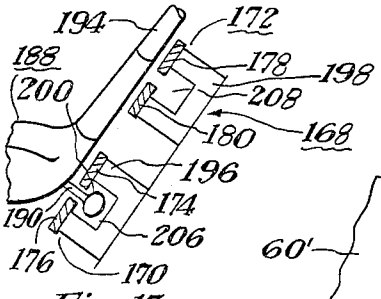



Fig. 13.

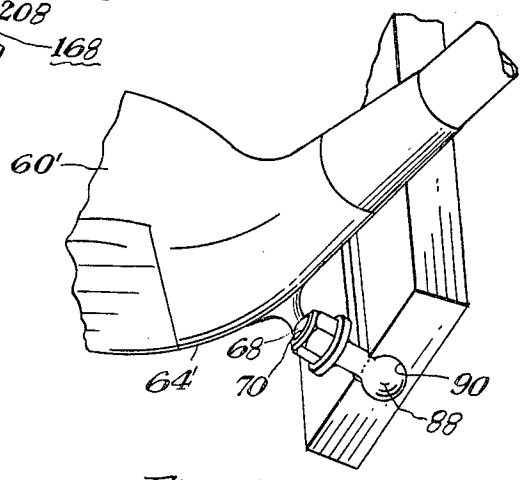



Fig. 5.

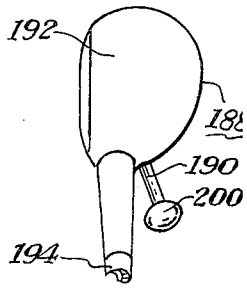



Fig. 14.




Fig. 7.

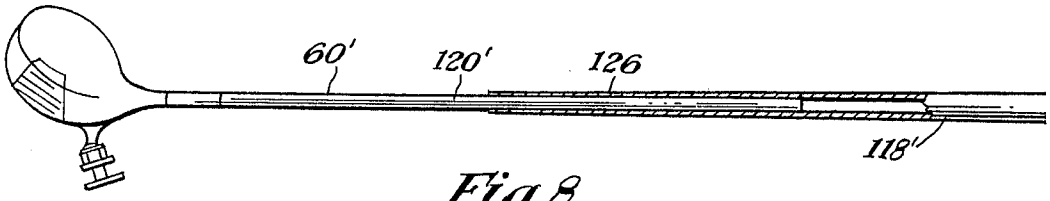



Fig. 8.

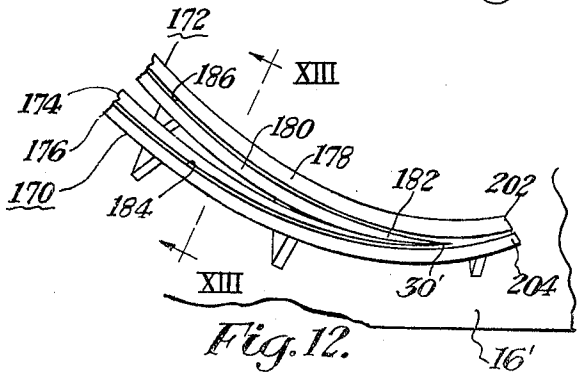



Fig. 12.

INVENTOR
Joseph A. Mark
BY
Buell, Blenko & Ziesenheim
HIS ATTORNEYS

Jan. 13, 1970 J. A. MARK 3,489,416

GOLF SWING PRACTICE MEANS

Filed June 19, 1967 7 Sheets-Sheet 6

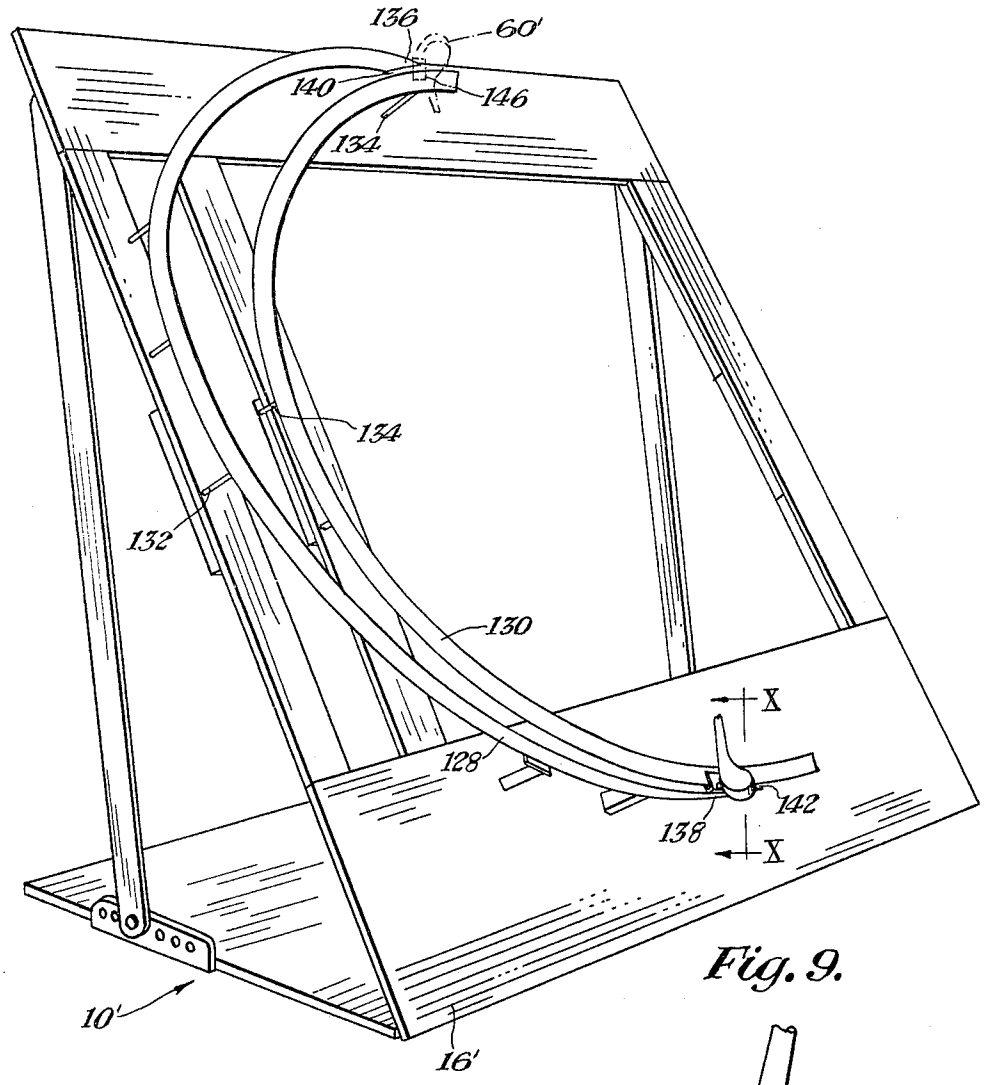



Fig. 9.

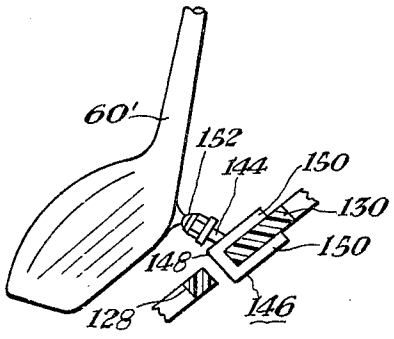



Fig. 10.

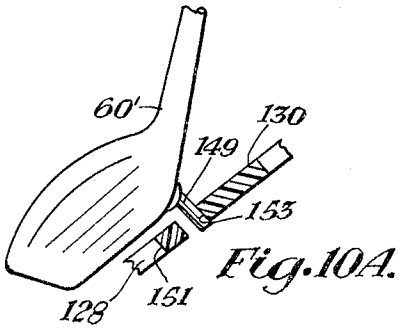



Fig. 10A.

INVENTOR
Joseph A. Mark
BY
Buell, Blenko & Ziesenheim
HIS ATTORNEYS

Jan. 13, 1970 J. A. MARK 3,489,416

GOLF SWING PRACTICE MEANS

Filed June 19, 1967 7 Sheets-Sheet 7

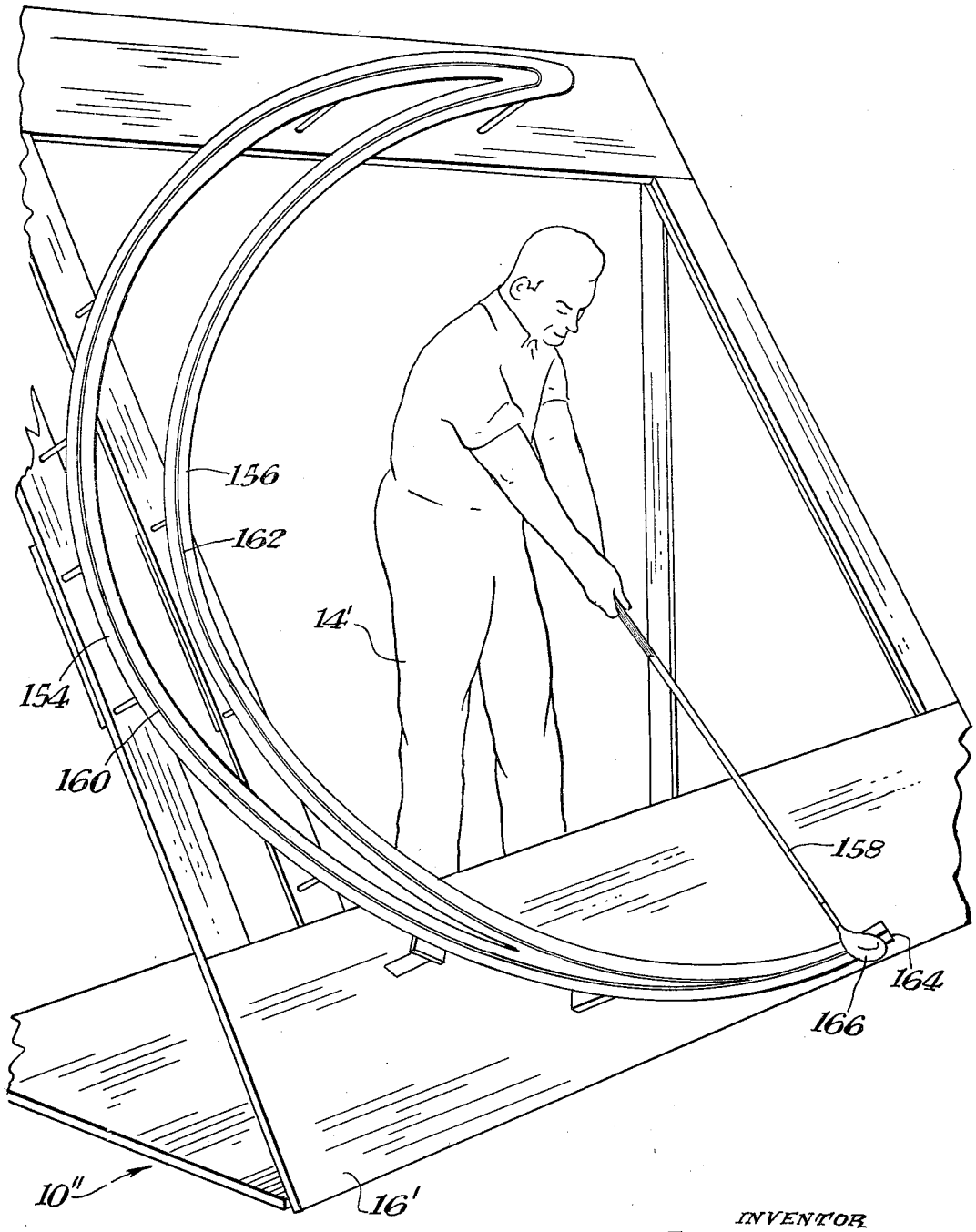



Fig. 11.

INVENTOR
Joseph A. Mark
BY
Buell, Blenko & Ziesenheim
HIS ATTORNEYS

United States Patent Office 3,489,416 Patented Jan. 13, 1970



3,489,416

# GOLF SWING PRACTICE MEANS

Joseph A. Mark, 161 Le Grande Drive, Pittsburgh, Pa. 15221

Filed June 19, 1967, Ser. No. 647,127
Int. Cl. A63b 69/36
U.S. Cl. 273—191 19 Claims

## ABSTRACT OF THE DISCLOSURE

A golf swing practice device includes track means for guiding the golf club through an inside out or "grooved" swing. The support on which the track means are mounted is adjustable in inclination to conform the swing planes of the golf swing and to a given length of golf club. The track means includes a first arcuate track member mounted on the support and defining the backswing of the golf club. A second track member is mounted inwardly of the first track member, i.e., between the outer or backswing member and the user. The second or power swing track member is also disposed generally behind the plane of the backswing track member but substantially in a plane which intersects the plane of the backswing along a line extending from the user's shoulders to the point of ball impact. Various guiding means can be mounted on the golf club as desired for cooperating with complementary guide means on the track members for guiding the golf club along the track members. Further, various means can be mounted on the golf club or on its guiding means to permit angular displacement of the golf club or of the handle portion thereof relative to the track members as the golf club is moved therealong.

The present invention relates to a golf swing practice means and more particularly to practice devices capable of use either indoors or out of doors. Specifically, my novel practice means aids the user in attaining complete and full control over manipulations of various parts of the body and over the attendant motions of the club particularly during the back and power swings in order to develop a professional, repeatable or "grooved" swing.

In accepted golf playing theory the club head must follow the accepted and correct path if all of the physical movements of the golfer are performed properly and in the correct sequence throughout the golf swing. Conversely, I have found that by carefully defining the paths or arcs of the golf club head, particularly during the back and power swings, the correct body movements of the golfer and the correct sequence in performing the various elements of a grooved golf swing can be learned much more quickly and accurately by even the most mediocre player.

It has been established that the proper golf swing is identical for all of the clubs (excepting the putter) and only the inclinational angles of the planes of the back and fore swings vary from one club to the other. Thus, the swing planes are least steep when swinging with the driver and most steep when swinging with the No. 9 iron. The swing planes for the remaining clubs vary between these two inclinational limits depending upon the length of the club.

Obviously, too, the aforementioned inclinational limits of the swing planes will also vary according to the heights of individual golfers. Thus, a tall player using a driver will employ more steeply inclined swing planes than a shorter player employing the same club.

Modern golf theory postulates the use of an "inside-out" golf swing, giving rise to the plural swing planes mentioned above for a given golf swing. Thus, the fore or power swing plane is rotated slightly clockwise relative to



the backswing plane, with the referents being a right-handed player looking toward ground level. With the same referents, it has been established that the rotational axis of the fore-swing plane is a line connecting the ball addressed by the player and the left shoulder of the player and lying of course in both the backswing and power swing planes.

The "inside-out" swing is essential for attainment of maximum distance and accuracy of driver and iron shots. If the swing is not properly "grooved" in this manner the golfer does not attain a swing of maximum power and moreover evidences a tendency to slice.

It has also been established, for a proper golf swing, that the moment of impact between the club head and the ball in normal lay occurs an instant before the club head reaches the lowest point in the power swing arc. Thus, the club head tends to mash slightly downwardly upon the ball against the divot normally taken in this type of golf swing. On the other hand, impact with a teed ball properly occurs just after the lowermost point of the power swing arc.

Although most of the aforementioned features of a proper, "grooved" golfswing are well known and are set forth, for example, in Hogan and Wind, Ben Hogan's Five Lessons (1957), published by A. S. Barnes & Co., New York city, I have briefly reviewed these essentials here as a proper environmental background for discussion of my novel Golf Swing Practice Means and for differentiating my practice means from previously proposed practice devices.

I have discovered that by proper control of the various arcuate paths of a golf club head throughout the inside-out golf swing that (1) the proper physical movements of the user of my device follow more or less naturally and (2) a repeatable or grooved swing can be developed. Owing to the perfection and repeatability in the grooved swing which can be developed with my invention, my practice means is useful not only to beginners but also to high and low handicapped players and even to professionals, particularly during off season periods.

By properly guiding the club head during the back and fore swings the user of my practice means is reminded to follow the accepted and essential sequence of physical movements. Thus, during the backswing the shoulders turn the hips to the right (for a right-handed player) and at the beginning of the power swing the hips snap to the left to multiply the swinging force which is conducted through the upper part of the body and shoulders to the arms. The proper movement of the arms including the wrist-break again multiply the swing force so that the ball is struck with tremendous impact (see pp. 88–96 of Hogan and Wind, supra).

Previously proposed practice devices are incapable of guiding the club head through the aforedescribed inside-out swing involving different but intersecting planes for the back swing and the fore or power swing respectively. As a result previously proposed devices are not capable of directing and guiding the proper sequence of the user's physical movements. Moreover, previous devices are not capable of suitable adjustment to differences in height and in other physical characteristics of individual users. In so far as is known, none of the previously proposed practice devices is suitable for indoor usage.

As an example, Hansen 1,634,102 discloses a mechanical golf instructor and exerciser using different arcuate paths for the back and fore swings. However, the planes of the respective paths are substantially parallel so that no inside-out swing is possible when using the Hansen device.

A single arcuate path is employed in the practice devices of Hansen 1,633,527, Plunket et al. 2,520,287 and 1,960,787. Here again, no inside-out swing is possible.

The practice device disclosed by McDonald 1,944,942 suffers from the same disadvantage in that his dual guide tracks merely provide a second support for the club shank in a single plane golf swing.

Similar defects are evident in other prior practice devices of which I am aware.

I overcome these difficulties of the prior art by providing golf practice means in which first arcuate path means are provided for the club head during the backswing thereof and second arcuate path means are provided for the club head in its fore swing. The fore path means are disposed generally inside of the back swing path means, i.e., between the back swing path means and the user. In addition, the major proportion of the fore swing path means is disposed somewhat behind the backswing means but in a plane which intersects that of the backswing path means along a line extending from the ball addressed by the user to a point on the user's left shoulder for a right-handed player. For left-handed players, the components of my novel practice means can be disposed in analogous mirror image relation to those components as illustrated in the drawings.

In addition, my novel practice means includes novel adjustment means for adjusting the inclinations of the back and fore swing planes to the length of club and to the height of the user. Novel means are also provided by my invention for lengthening or shortening the upper portions of the back and fore swing path means to adapt the practice means to the physical suppleness of indivdual users. I also provide a practice club, which in modifications thereof, is adjustable in length to individual arm lengths. The latter mentioned adjustment means need not be extensive, for I have found that in a group of individuals of considerably variable height that the ground to knuckle distances (with the individuals standing with arms straight down at their sides and with their fists clenched) between such individuals vary but slightly.

I also provide a novel practice club having means associated with the handle or shank for permitting turning of the handle (through about 90° at least) during the back and fore swings. In one form of such means I provide a practice club with an automatically telescoping shank to provide such turning and also to permit automatic extension of the practice club to accommodate physical differences between individual users.

I accomplish these desirable results by providing a golf swing practice device comprising an inclined support conforming generally to the plane of the golf swing, track means for guiding a golf club through at least the backswing and foreswing portions of a golf swing, and means for mounting relative to the user of said device said backswing track means generally outwardly of said foreswing track means and for mounting said foreswing track means substantially behind the plane of said backswing track means but generally in a plane intersecting with said backswing track means plane to guide said golf club throughout an inside-out golf swing.

I also desirably provide a practice device wherein said track means are a pair of arcuate track members joined adjacent their ends respectively, and said track members each have interconnected club guiding means formed therein for guiding engagement with and retention of said golf club.

I also desirably provide a practice device wherein said support includes an inclined platform hingedly joined to a base member, and means are provided for adjusting the inclination of said platform relative to said base member.

I also desirably provide a practice device wherein the lower most portion of said track means are spaced above the lower edge of said platform and the upper end of said track means is correspondingly lowered, and said track guide means are engageable with the head of the foreshortened practice club to permit use of said device within a low ceiling room; or wherein the lowermost point of said track means is juxtaposed to the lower edge of said platform and the upper end of said track means is correspondingly raised, a full length practice club is provided for use with said device, said track means being engageable with the head of said club so that a golf ball can be struck when using said practice device.

In the foregoing paragraphs various objects, features and advantages of the invention have been set forth. These and other objects, features and advantages of the invention will be elaborated upon in the forthcoming detailed description of presently preferred embodiments of the invention and of certain presently preferred methods of practicing the same.

In the accompanying drawings I have illustrated certain presently preferred embodiments of the invention and certain presently preferred methods of practicing the same wherein:

FIGURE 1 is a composite isometric view of one form of my novel practice device arranged for indoor use and illustrating means for adjusting the inclination of the device for differing sizes of clubs.

FIGURE 2 is a composite isometric view of the practice device shown in FIGURE 1 and illustrating various stages of the backswing and foreswing;

FIGURE 3 is a left side perspective view of the apparatus shown in FIGURES 1 or 2;

FIGURE 4 is an enlarged partial right side perspective view of one form of novel practice club head of my invention illustrated in association with my practice device;

FIGURE 5 is a partial cross-sectional view of the practice means shown in the preceding figures and illustrating an alternative connecting link between my novel practice club and the practice device;

FIGURE 6 is a partial isometric view similar to the upper portion of FIGURES 1 and 2 and illustrating novel means for adjusting the length of the back and foreswing path means of my device to accommodate individual users of differing degrees of physical suppleness;

FIGURE 7 is a side elevational view of another form of my novel practice club having means forming part thereof for permitting rotative movement of the club handle and user's hands as the club head is moved along the path means of my practice device;

FIGURE 8 is a similar view of another form of my novel practice club, having means for automatically extending the shank thereof and for permitting turning of the club handle relative to the club head for purposes mentioned previously;

FIGURE 9 is a perspective view similar to FIGURES 1 and 2 but illustrating a form of my novel practice means having modified path means for the practice club head;

FIGURE 10 is an enlarged partial, cross-sectional view of the apparatus as shown in FIGURE 9 and taken along reference line X—X thereof;

FIGURE 10A is a similar view showing the golf club with modified track engaging means;

FIGURE 11 is an isometric view of still another form of my novel practice device arranged for usage out of doors;

FIGURE 12 is an enlarged partial isometric view of another form of my novel practice means illustrating a modified track arrangement;

FIGURE 13 is a cross-sectional view taken along reference line XIII—XIII of FIGURE 12 and showing in addition my novel practice club used therewith; and

FIGURE 14 is a top plan view of the practice club shown in FIGURE 13.

Referring now more particularly to FIGURES 1–3 of the drawings a golf swing practice device **10** shown therein comprises a base **12** on which user **14** stands. A support or inclined platform **16** for back and fore swing track members **18** and **20** respectively is hingedly or otherwise pivotally connected to the platform **12**. The

inclined platform **16** can be supported in a plurality of inclinations by upright braces **22** connectable at their lower ends to a pair of adjustment brackets secured to platform **12** one of which is denoted by reference character **24**. Brackets **24** include a plurality of adjustment apertures **26** by which the lower ends of braces **22** are adjustably positioned along the side edges of platform **12**. These adjustment means are employed in cooperation with primary adjustment apertures (FIGURE 3) spaced along the side of the platform **16**.

As better shown in FIGURE 3, backswing track **18** is mounted in raised relation relative to the track platform **16** by a number of columnar supporting members **27** which are of substantially equal length. On the other hand the inner or power swing track **20** is joined at its upper end to the upper end of the backswing track as denoted by reference character **28**. Adjacent the lower ends of the tracks **18**, **20**, they merge in a Y connection denoted by reference character **30**. Such connection permits access to backswing track **18** and egress from fore swing track **20** at common track end **32**, as described below in greater detail with reference to FIGURE 4.

A comparison between FIGURES 1 or 2 and 3 show that the foreswing track **20** not only is mounted between the outer or backswing track **18** and user **14** but also is depressed rearwardly thereof, i.e., closer to the platform **16** throughout most of its length. Otherwise, fore swing track **20** is similarly mounted on a plurality of columnar supports **34**, as better shown in FIGURE 3. Moreover the foreswing track **20** is mounted substantially behind the plane of the backswing track (FIGURE 3) but generally in a plane which intersects the plane of the backswing track **18** along a line of intersection extending from the user's left shoulder to the ball location **52**, i.e., along string **56** used to determine the proper elevation of platform **16** (FIGURE 1 or 1A). Thus the club is guided into a perfect inside-out or "grooved" swing regardless of the inclination of the platform **16**.

It will be understood, of course, that the spatial relationships of the foreswing track **20** and the backswing track **18** can be varied to conform to differing playing styles. For example, looking at FIGURE 3, the separation between the tracks **18**, **20** can be made larger or smaller. Moreover, the location of the maximum separation, denoted by double headed arrow **21**, can be moved upwardly or downwardly. Similarly, as viewed in FIGURE 2 for example, one or both of the swing tracks **18**, **20** can be disposed closer to or farther from the user of the device.

It is also evident that, while the foreswing and backswing are denoted as lying in particular intersecting planes these swings may not at all times conform precisely to a particular plane. For example at beginning of the backswing most authorities stipulate a club head travel of about 12 inches in the direction of ball trajectory and more or less parallel to the ground. At the end of this distance the club head in a proper swing breaks slightly to the rear of this line when the player's hips commence to turn.

Platform **16** is provided with a relatively large opening **36** to accommodate user **14** without interference with his physical movements. The opening **36** is defined by a pair of upright braces **38** and **40**, with the brace **40** also affording intermediate support to the inner or fore swing track **20**. A similar, parallel brace **42** affords similar support to the outer or backswing track **18**.

Each of the tracks **18** or **20** is provided with club guiding means, which desirably but not necessarily also releasably attaches the club to the tracks. One form of such guiding means includes grooves **44** and **46**, which are formed respectively in tracks **18** and **20** and in this example are of generally inverted T-shaped cross section as better shown in FIGURE 4. At the upper junction **28** of the tracks **18** and **20** grooves **44**, **46** are merged by a smoothly re-entrant curve **48**. Near the lower end **32** the grooves merge at the previously mentioned Y intersection **30**.

The proper inclination of the inclined platform **16** is established by user **14** when properly gripping a standard golf club, for example driver **50**. A block of wood **52** or other suitable material is glued or otherwise secured to the floor of the indoor space in which the practice device **10** is used. Block **52** thus represents the location of the ball addressed by user **14**. Base **12** of practice device **10** is suitably positioned relative to the ball locating block **52**. When the ball is properly addressed the shank of club **50** engages track end **32** as shown in the solid outlines of FIGURE 1. The elevation relative to inclined platform **16** of the track end **32**, and hence of the outer or backswing track **18**, is adjusted by spacer **54** for this purpose. When the practice device **10**, club **50**, and player **14** are properly aligned with ball locater **52** a string **56** stretched between locater **52** and projection **58** on upper track end **28** lightly engages the left shoulder of user **14**.

A similar relationship is shown in chain outline in FIGURE 1 wherein the practice device **10** is aligned with its platform **16** in a steeper inclination to accommodate user **14** and the shortest standard club, or number nine iron **60**.

With the location and inclination of the practice device **10** and the stance of player **14** thus determined, user **14** then, for indoor use, employs my novel practice club **60** also shown in chain outline in FIGURE 1 and in detail in FIGURE 4. Desirably practice club **60** is foreshortened in length to about two feet so as not to interfere with the ceiling of the indoor practice space. As better shown in FIGURE 4 club head **64** is provided with connective stud **66** threaded into the heel of the club head **64**. The outer end of stud **66** terminates in ball **68** fitted in socket **70** therefor. A discoidal slot guide **72** is linked through its connecting stud **74** to the ball socket **70**. The length of connecting stud **74** is such that the slot guide **72** can be inserted to ride freely within the slots **44** or **46** of the practice device **10**.

As the practice club **60** and slot guide **72** are moved upwardly by the player along the backswing track **18** (chain outline portions of FIGURE 1) the slot guide is guided into the left hand branch of Y intersection **30** (FIGURE 4) and thence into the slot **44** of backswing track **18**.

At the upper limit of the backswing, as better shown by the solid outlines of FIGURE 2, practice club **60** and slot guide **72** are guided smoothly from the slot **44** of outer track **18** into the upper end of slot **46** of the inner or backswing track **20** by the aforementioned reentrant curve portion **48** of the slot. At the commencement of the power or fore swing (FIGURE 2) user **14** must begin to turn his hips in accordance with accepted golf swing practice and then his shoulders in order to conform his physical movements to the path of the practice club **60** as it moves downwardly along the inner track **20**. This is demonstrated by the uppermost chain outline position of practice club **60** in FIGURE 2.

The user continues to turn his hips and shoulders until the wrist-break position of the practice club **60** as denoted by chain outline **74** of FIGURE 2 is reached. Thence, the user's arm and wrist movements follow the practice club **60** as the latter passes through intersection **30** to the ball impacting position of FIGURE 2, as denoted by chain outline **76**. From position **76**, practice club **60** and the user's attendant physical movements proceed along the follow-through portion (not shown) of the golf swing. If desired, a follow-through track portion can be provided for the practice club **60** as denoted by chain outline **78** in FIGURE 2. If desired, the follow-through track **78** can be extended beyond that shown in FIGURE 2 on a suitable support (not shown) secured to the platform **16**.

A suitable mass of foam rubber **82** or other force absorbing material desirably is secured to the ceiling to prematurely terminate the user's follow-through swing and to prevent damage to the ceiling.

For example, force-absorbing material or deceleration means **82** can include an outer softer layer **84** and an inner less resilient layer **86** to flatten the wave fronts of the deceleration forces when the club head **64** strikes the deceleration means **82**.

In order to permit turning of the practice club **60** through a greater angle as the club head **64** is moved along the tracks **18, 20** the discoidal slot guide of FIGURE 4 can be replaced with ball guide **88** of FIGURE 5 and the T-shaped slots of FIGURES 1–4 replaced with suitably rounded slots such as the slot **90** of FIGURE 5. The ball guide **88** provides in effect a second ball joint in series with the ball joint **68–70** described heretofore. Thus, club head **64'** of club **60'** is afforded a greater freedom of movement particularly about its long axis. Moreover, ball guide **88** is less likely to hang up within the rounded slots.

In FIGURE 6 of the drawings, the use of alternative re-entrant track end means provide adjustment in the length of tracks **18'** and **20'** in the upper areas thereof to accommodate differing lengths of backswing and correspondingly different degrees of physical suppleness in individual users. Thus, a short backswing is provided by upper re-entrant member **92**, the ends of which are joined respectively to the ends of tracks **18', 20'** at junctions **94** and **96** where the ends are secured to columnar supports **98** and **100** respectively.

On the other hand, an alternative medium backswing is afforded by chain outline position **102** of the re-entrant member **92** joined to outer connecting track section **104** and inner connecting track section **106** at junctions **108** and **110** respectively on supports **112** and **114** respectively. The track sections **104, 106** in turn are joined at the aforementioned junctions **94** and **96** respectively to the terminal ends of tracks **18', 20'**.

For the maximum or full backswing, re-entrant member **92** or **102** is replaced by a correspondingly longer re-entrant member **116** which is similarly joined to track sections **104, 106**. It will be understood, of course, that track sections **104, 106** can be made integrally with intermediate re-entrant member **102** and also with the full backswing member **116** and the junctions **108, 110** and supports **112, 114** eliminated.

With reference now to FIGURE 7 of the drawings, means are provided for eliminating one or both of the ball joints described in connection with FIGURES 4 and 5 of the drawing. In FIGURE 7 practice club **60'** includes handle portion **118** threadedly joined to shank portion **120** which is in turn joined to head **64'** and its discoidal link member **122**. When handle **118** is threadedly engaged to shank **120** the handle is backed off a half or full turn from a tightened position to leave gap **124**. Then the handle **118** is free to rotate through the required angular displacement to shank **120** and club head **64** or the club head **64'** and connector **122** are prevented from such angular displacement by engagement of connecting link **122** in tracks **44** or **46** of the preceding figures.

In FIGURE 8 of the drawings practice club **60'** is alternatively provided with telescoping section **126** in shank portion **120'** to permit turning of the handle portion **118'** relative to club head **64'**. Telescoping section **126** also affords an automatic club length adjustment for differences in reach of individual users.

Referring now to FIGURES 9 and 10 of the drawings, a modified form of my practice means **10'** is shown therein. Practice means **10'** is constructed in a manner generally similar to that described in the preceding figures, but is provided with modified backswing track **128** and a modified foreswing track **130**, neither of which are provided with the track grooves described in the preceding figures. Instead, track members **128** and **130** are flat arcuate strips of suitably rigid material such as Formica or other plastic, or aluminum, steel or other structural metal and are mounted on platform **16'** by supporting studs **132** and **134** respectively. Track members **128, 130** are otherwise positioned with relation to inclined platform **16'** in the manner shown in FIGURE 3 with reference to slotted tracks **18, 20**. However, Y intersection **30** and upper end return means **28, 48** of FIGURES 1–3 are omitted. Instead, ends of outer or backswing track **128** are tapered at **136** and **138** respectively and are spaced from the adjacent edges of inner or foreswing track **130** to provide gaps **140** and **142** therebetween.

Practice club **60'** as better shown in FIGURE 10 is provided with connective link **144** terminating in U-shaped track guide **146**. Bight **148** of track guide **146** is sized so as to pass through spaces **140, 142** when the track guide **146** is engaged only with the inner or fore swing track **130** as better shown in FIGURE 10. On the other hand, legs **150** of track guide **146** are of sufficient length to overlie both the tapered end portion **136** or **138** of track **128** and the adjacent portion of track **130** when passing from the outer track **128** to the inner track **130** at the upper gap **140** or when passing from inner track **130** to outer track **128** at the lower gap **142**.

If desired, ball joint **152** can be mounted in link **144** to permit angular displacement of practice club **60'** relative to track guide **146**. On the other hand, ball joint **152** can be omitted and the handle turning means of FIGURES 7 and 8 can be provided in the club **60'** of FIGURES 9 and 10.

It is contemplated by my invention that the U-shaped club guide **146** can be replaced by a straight guide pin **149** or the like as shown in FIGURE 10A. The thickness of pin **149** is such as to permit pin **149** to pass freely through gaps **140, 142** of the track means of FIGURE 9. In use the club **60'** is held by the user so that the club pin **149** is urged lightly against outer arcuate edges **151, 153** of tracks **128, 130**.

It is also contemplated that the club **60'** can be provided without any added guide means whatsoever. In the last example, the club is held by the user such that the club head or adjacent shank portion is urged lightly against the front or flat surfaces of the tracks **18, 20** of FIGURES 1–3 or of the tracks **128, 130** of FIGURE 9. The slots of tracks **18, 20** can then be omitted. In the latter example, each of the tracks can be grooved or channeled (not shown) with a cross-sectional configuration complementary to part or all of the club head profile.

In FIGURE 11 of the drawings another modification **10''** of my golf practice device is illustrated. Device **10''** is provided with track means **154** and **156** which in this example are similar to tracks **18** and **20** of FIGURES 1–3, although the alternative constructions of track means described in connection with FIGURES 9 and 10 can be employed. In my novel practice device **10''** the arcuate paths of tracks **154, 156** are correspondingly enlarged so that user **14'** can use a full length club **158** for practice purposes, for example where the practice device **10''** is mounted out of doors or in a high ceiling room such as a gymnasium.

In this example, club **158** is provided with a suitable slot guide such as one of the slot guides shown in FIGURES 4, 5, 7 and 8. Tracks **154** and **156** are provided with slots **160** and **162** respectively in the manner described in connection with FIGURES 1–3 or FIGURE 5. The inside-out relationship, described above in connection with FIGURES 1–3, of foreswing track **156** is preserved with relation to backswing track **154**.

In the practice device **10''** lower end **164** of the track means **154, 156** is mounted near the lower edge of the inclined platform **16'** such that club head **166** passes within about one inch of the floor or ground at the lowermost point in the foreswing. Accordingly the prac-

tice device **10''** can be employed for driving a ball mounted on a tee or other suitable support if desired.

The full club length practice device **10''** can be made in a variety of ways for use either with the shortest club or No. 9 iron for all practice purposes, or the track means **154, 156** can be suitably modified to provide a plurality of practice devices for separate club groupings. For example, tracks **154, 156** can define respectively larger arcuate paths for a club grouping of the longer clubs such as the driver and Nos. 2–4 woods; with intermediate arcuate lengths for the clubs of intermediate lengths i.e., Nos. 2–5 irons; and smaller arcuate paths for Nos. 6–9 irons. The aforementioned track lengths are not separately illustrated since only minor changes are involved which are readily determined from the average club length in each of the aforementioned three groups of clubs.

The actual differences in club length in each of the aforesaid club groupings is only 1½ inches so that adjustments can be made within each group of clubs by changes in hand grip. With the latter arrangement a separate practice device such as the device **10''** can be built for each of the aforementioned club groupings, for example where such practice devices are provided at golf courses, driving ranges, golfing associations, or the like.

Referring now to FIGURES 12–14 of the drawings another form of my novel practice means having a modified track arrangement **168** is illustrated. As better shown in FIGURES 12 and 13 each of the track means **170, 172**, which define the backswing and foreswing respectively are formed from a pair of parallel spaced members **174, 176** or **178, 180** respectively. The outer track member **180** of track means **172** is joined at its lower end, as denoted by reference character **182**, to the lower end of the inward track member **174** of the backswing track means **170** to form the Y intersection **30'**. As better shown in FIGURE 13 each pair of track members **174, 176** or **178, 180** are uniformly spaced throughout their length to form an open-sided guide slot or gap **184** or **186** therebetween. The track means **172, 170** are otherwise mounted in spaced relation to the platform **16'** in a spatial organization similar to that shown in FIGURE 3 of the drawings.

My novel practice club **188** employed with the practice means of FIGURES 12 and 13 need not be provided with a ball and socket joint or equivalent universal joint to permit turning of the club head relative to the track means **170, 172** as the club head is moved through the back and fore swings. Instead, the club **188** is provided with a relatively rigid pin **190** which as better shown in FIGURE 14 is secured to the heel of the club **188** at an angle to the long axis of club head **192**. On the other hand, the pin **190** desirably is disposed substantially at right angles to the practice club shank **194** (FIGURE 13). With this arrangement the pin **190** leads the club head **192** (for a right-handed player) during the lower portions of the back and foreswings (FIGURE 14), but lags the club head **192** in the upper portions thereof.

As better shown in FIGURE 13 the track members **174, 176** and **178, 180** are supported on notched columnar supports **196** and **198**. The notched supports **196, 198** thus provide clearances for ball **200** or other retaining member secured to the outer end of pin **190**. The supports **196** for the outward or back swing track means **170** (including track members **176, 174**) are of uniform heights similar in height to the supports **27** shown in FIGURE 3, while the supports **198** for the inward or foreswing track **172** are of varying heights, similar in height respectively to supports **34** of FIGURE 3. At the lower end of the track arrangement **168**, the pin **190** of the club **188** can be inserted into the gap or slot between the lower end portion **202** of the inner member **178** of the foreswing track **172** and the lower end portion **204** of the outer member **176** of the back swing track **170**.

Desirably, the track members **174, 176** or **178, 180** are are spaced as shown in FIGURE 13 to provide ample clearances for the passage of the pin **190**. This permits relatively minor adjustments in the fore and back swings to adapt to minor individual differences in users of my golf practice means. The ball member **200** is suitably shaped to prevent its removal through slots or gaps **184, 186**. On the other hand the aforementioned clearances prevent binding of the pin **190** and ball member **200** against the inward surfaces of the track members **174, 176** and **178, 180**. Similarly, notches **206** and **208** of supports **196, 198** are sized to permit passage of the ball member **200** freely without engagement with the supports **196, 198**. Although the ball member **200** is illustrated as an oblate spheroid, other suitable configurations obviously can be employed. It will also be apparent that the length of the pin **190** is sufficient as to permit the aforementioned angular displacement of the practice club **188** about its shank **194** without binding of the track members **174, 176** or **178, 180** between the heel of the club head **192** and the retaining member **200** of the pin **190**.

From the foregoing it will be apparent that novel and efficient forms of golf swing practice means have been described herein.

While I have shown and described certain presently preferred embodiments of the invention and have illustrated presently preferred methods of practicing the same, it is to be distinctly understood that the invention is not limited thereto but may be otherwise variously embodied and practiced within the scope of the following claims.

I claim:

**1.** A golf swing practice device comprising an inclined support conforming generally to the plane of the golf swing, backswing track means, and foreswing track means for guiding a golf club through at least the backswing and foreswing portions respectively of a golf swing, means for mounting on said support relative to the user of said device said backswing track means substantially in a plane disposed generally forwardly of said foreswing track means and for mounting said foreswing track means substantially behind the plane of said backswing track means but generally in a plane intersecting with said backswing track means plane, and upper and lower portions of said backswing and said foreswing track means communicating adjacent the intersections of said backswing and foreswing track means to guide said golf club throughout an inside-out golf swing.

**2.** The combination according to claim **1** wherein said backswing and said foreswing means each have interconnected club guiding means formed therein for guiding engagement with the retention of a golf club.

**3.** The combination according to claim **2** including a golf club, a guide of discoidal configuration provided on said club, and said club guiding means include a slot in each of said track means and of generally inverted T-shaped configuration to accommodate said guide.

**4.** The combination according to claim **3** wherein said guide is joined to said golf club through a universal joint to permit angular displacement of said club about its longitudinal axis as said club is moved along said track means.

**5.** The combination according to claim **2** including a golf club, said club guiding means having a slot on each of said track means and being of generally circular cross-sectional configuration with a constricted longitudinal opening, and said golf club having a guide including a ball guide member closely fitted within said slot for club guiding movement therealong.

**6.** The combination according to claim **5** wherein said ball guide member is connected to said club through a universal joint.

**7.** The combination according to claim **2** wherein said club guiding means include a slot on each of said track means for engagement with a guide member on a golf club.

8. The combination according to claim 7 including a golf club having a guide member located on the head portion of said club.

9. The combination according to claim 2 including a golf club, rotation permitting means coupled between a handle portion and a shank portion of said club to permit turning of said handle portion and the hands of a user as the remainder of said club is guided along said track members by said club guiding means.

10. The combination according to claim 1 including a golf club, each of said track being means a flat, arcuate track member and said golf club having a track guide member shaped for engaging the arcuate edges of said track members.

11. The combination according to claim 10 wherein one of said track members is provided with tapered end portions closely spaced from the end portions respectively of the other of said track members and said track guide member is of U-shaped construction capable of engaging the arcuate edges of said track members and having a bight portion shaped for passage through the spaces between said track member ends.

12. The combination according to claim 1 wherein said backswing track means and said foreswing track means are terminated before the end of the backswing and the beginning of the foreswing respectively, and a number of re-entrant track members of differing sizes are provided for alternative connection of each of their ends to the terminal ends respectively of said backswing track means and said foreswing track means to adjust the length of said backswing track means and the corresponding length of said foreswing track means.

13. The combination according to claim 1 wherein said support includes an inclined platform hingedly joined to a base member, and means are provided for adjusting the inclination of said platform relative to said base member.

14. The combination according to claim 13 wherein the lowermost portions of said track means are spaced above the lower edge of said platform and the upper ends of said track means are correspondingly lowered, and said track means are engageable with the head of a foreshortened practice club to permit use of said device within a low ceiling room.



15. The combination according to claim 13 wherein the lower intersection of said track means is juxtaposed to the lower edge of said platform and the upper intersection of said track means is correspondingly raised, a full length practice club is provided for use with said device, said track means being engageable with the head of said club so that a golf ball can be struck when using said practice device.

16. The combination according to claim 1 wherein said backswing track means and said foreswing track means each include a pair of laterally spaced track members, each pair of said track members being uniformly spaced one from the other to form a club guiding slot or gap therebetween.

17. The combination according to claim 16 wherein a practice club is provided, said club including a heel portion having a guiding pin rigidly joined thereto, said pin terminating in a retaining member shaped to prevent removal thereof through said slot or gap, said pin being of sufficient length to space said retaining member from said club heel to prevent binding of said track members between said retaining member and said club heel when said club is rotated during said backswing and foreswing.

18. The combination according to claim 16 wherein a practice club is provided, said club having a guiding member secured thereto and engageable in each of said slots or gaps.

19. The combination according to claim 1 wherein said foreswing track means additionally are positioned to be disposed generally between said user and said backswing track means.

**References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 1,634,102 | 6/1927 | Hansen | 273—191 |
| 2,737,432 | 3/1956 | Jenks. | |
| 3,341,208 | 9/1967 | Marcella | 273—191 |

GEORGE J. MARLO, Primary Examiner

U.S. Cl. X.R.

273—81.2, 193