Aug. 12, 1969 W. G. LOMAS 3,460,391

GOLF PRACTICE MACHINE

Filed June 27, 1966 2 Sheets-Sheet 1

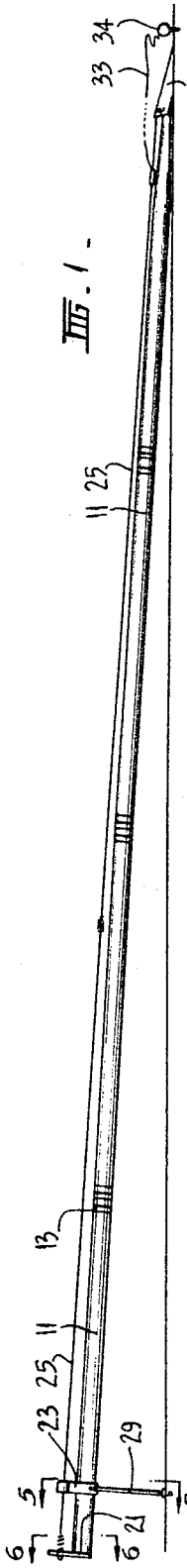


FIG. 1.

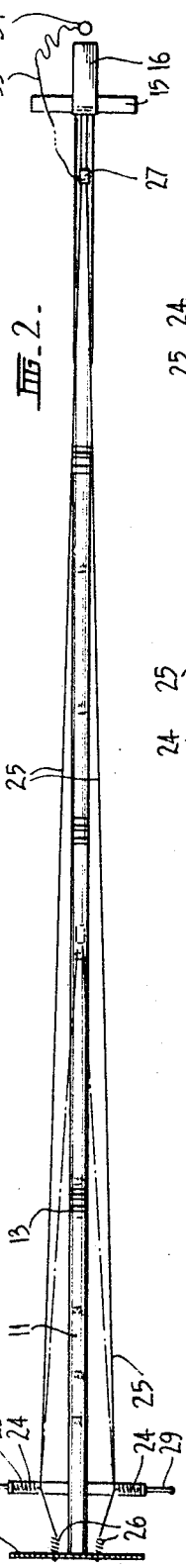


FIG. 2.

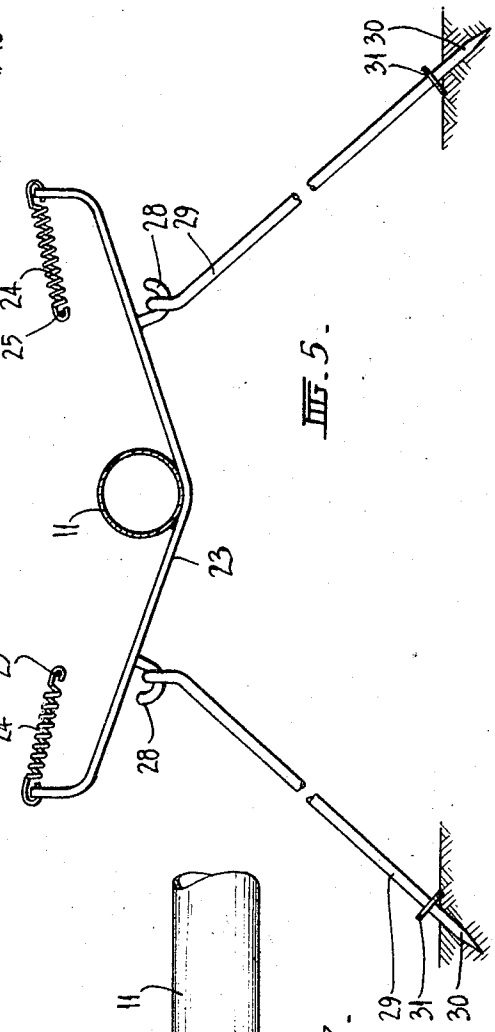


FIG. 5.

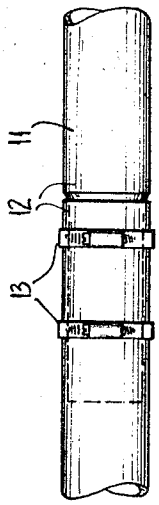


FIG. 7.

Inventor
William Guildford Lomas
By Cushman, Darby & Cushman
Attorneys

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GOLF PRACTICE MACHINE

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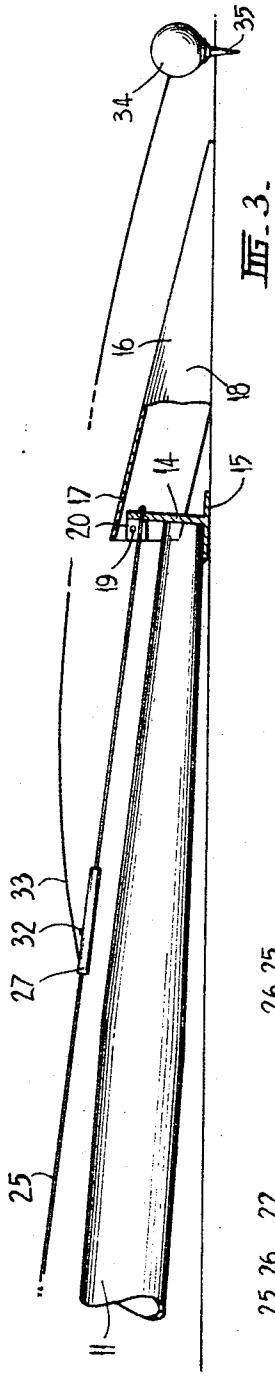


FIG. 3.

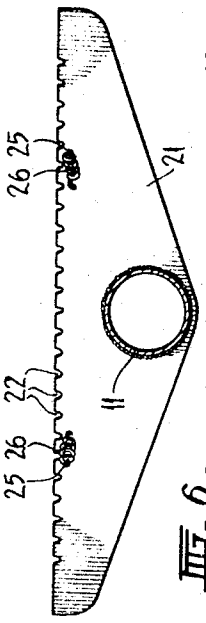


FIG. 6.

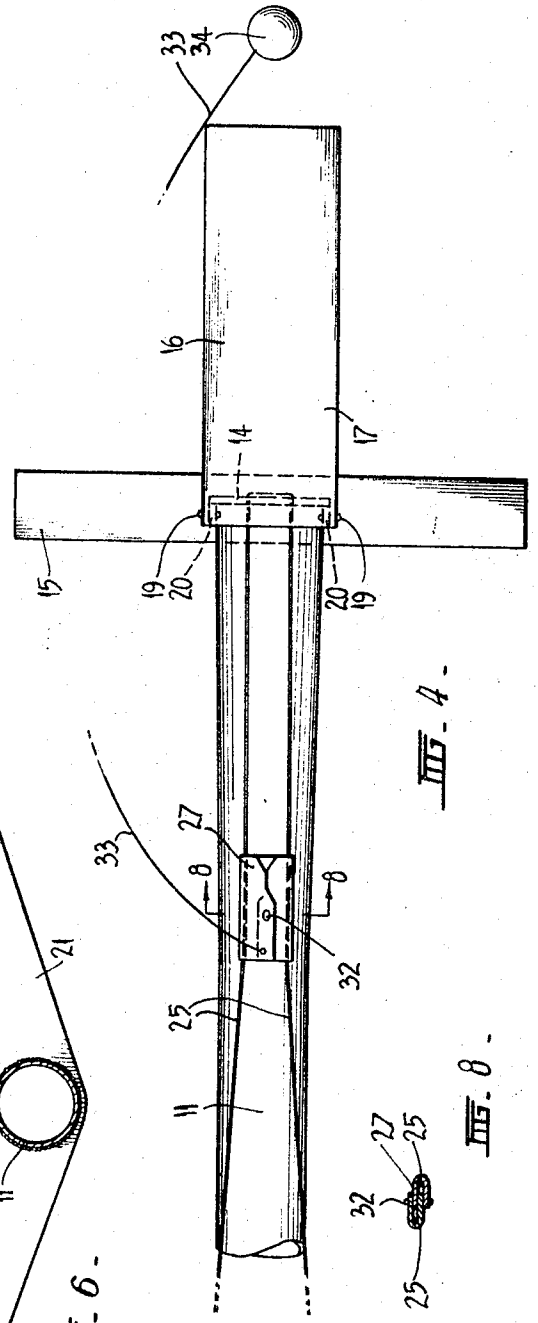


FIG. 4.

FIG. 8.

Inventor
William Guildford Lomas
By Cushman, Darby & Cushman

United States Patent Office

3,460,391

Patented Aug. 12, 1969

3,460,391

GOLF PRACTICE MACHINE

William Guildford Lomas, 20 Brynmawr Road, Camberwell, Victoria, Australia

Filed June 27, 1966, Ser. No. 560,586
Claims priority application Australia, July 1, 1965, 60,910/65
Int. Cl. G01l 5/02
U.S. Cl. 73—379 13 Claims

ABSTRACT OF THE DISCLOSURE

A golf practice apparatus comprising a support having a plurality of removable inter-fitting tubes and a pair of diverging, tensioned runners or wire guides mounted on the support. The runner wires carry a sliding carriage to which a practice ball is connected by a cord. The support includes a pair of hinged legs which permits variation of inclination with respect to the surface on which the apparatus rests.

This invention relates to an improved golf practice apparatus and refers particularly to apparatus for use either outdoors or indoors for the purpose of enabling golf strokes of various types to be practiced.

An object of this invention is to provide an improved golf practice apparatus which is relatively economical to construct, which will enable various types of golf strokes to be performed and which will enable the user to assess the quality of each stroke or shot performed on the apparatus.

With this object in view the invention broadly resides in a golf practice apparatus comprising a longitudinal support having means for positioning it horizontally or inclined, a pair of diverging runners carried by the longitudinal support, and a carriage slidable on the runners and constructed for the connection to it of a flexible member attached to a practice ball. Preferably means are provided whereby the resistance to movements of the carriage along the runners in the forward direction of the apparatus increases progressively with movement of the carriage in this direction.

According to a feature of the invention the diverging runners may comprise wires held under tension.

According to another feature tension springs may be provided drawing the runners away from each other near the forward end of the apparatus, this being the end towards which the runners diverge.

Other objects and features will be apparent from the following description of a preferred form thereof. In this description reference is made to the accompanying drawings wherein:

FIGURE 1 is a side view of apparatus according to the invention,

FIGURE 2 is a plan view of the same,

FIGURE 3 is an enlarged fragmentary side view of a rear part of the apparatus,

FIGURE 4 is a plan view corresponding to FIGURE 3,

FIGURE 5 is an enlarged view in section on the line 5—5 of FIGURE 1,

FIGURE 6 is an enlarged view in section on the line 6—6 of FIGURE 1,

FIGURE 7 is an enlarged fragmentary side view showing a connection between two adjacent parts of the apparatus, and

FIGURE 8 is a view in cross-section on line 8—8 of FIGURE 4.

The drawings illustrate golf practice apparatus comprising a longitudinal support **11** formed of a series of

tubular members **12** the ends of which are fitted together. FIGURE 7 illustrates how the end of one member **12** is swaged, drawn, or machined, to a smaller diameter and is inserted within the bore of the next member **12**. The latter is split longitudinally and encircled by clamps **13** which are tightened so as to make a firm rigid joint between the two members. Thus the support can be readily assembled for storage and transport.

One end of the support **11**, hereinafter termed the rear end, is fixed by welding or other suitable means to a transverse plate **14**. The plate **14** is welded at right angles to a further transverse plate **15** which extends beyond the plate **14** at each end thereof and is disposed to rest on the floor or ground with the support **11** extending forwardly from the member **14**, horizontally or inclined slightly upwardly. Means such as screws or spikes, not shown in the drawings, may be provided to secure the member **15** on the floor or ground. The end of the rearmost member **12** of the support **11** is preferably partially flattened as shown to give a greater horizontal width for attachment to the plate **14**.

The apparatus also includes at the rear end a ramp **16** consisting of a rectangular plate **17** with side flanges **18** which support the ramp with the rear edge of the plate **17** on or near the ground or floor. The side flanges **18** are connected to the plate **14** by means of pins **19** passing through the flanges **18** and through lugs **20** fixed to the plate **14**.

The apparatus includes at the forward end a transverse plate **21** fixed to the end of the foremost member **12** and having a horizontal upper edge with a series of notches **22** formed in it.

Slightly to the rear of the plate **21** a bow-shaped bar **23** is welded to the under side of the forward tubular member **12** so as to project laterally on each side. Each side portion of the bar **23** is inclined upwardly from the member **12** and is also bent upwardly near the outer end and apertured to receive the hooked end of a tension spring **24**. The inner ends of the springs **24** are also hooked and engage each with one of a pair of wires **25** extending between the plates **14** and **21**. The wires **25** are fixed to the plate **14** at two closely spaced points symmetrically disposed with respect to the longitudinal support **11**, while their forward ends are fastened to two tension springs **26** which are stretched and are fastened to two more widely spaced points on the plate **21** still symmetrically disposed with reference to the member **11**. Thus the wires **25** are kept taut. The springs **24** are also under tension and cause the wires **25** to bend at the points of engagement by the springs **24**. The portions of the wires **25** between the plate **14** and the springs **24** thus form diverging runners for a carriage **27**. The dimensions of the apparatus may be varied but in one suitable arrangement the support member has a length of the order of thirty feet, the wires **25** are about two inches apart at the plate **14** and about six inches apart at the springs **24**.

The bar **23** is provided with two hooks **23** welded one at each side and these are engaged by eyes on the ends of two legs **29** having pointed ends **30** and flanges **31**. The legs **29** serve to support the forward end of the apparatus above the ground by a variable distance according to the spread chosen for the legs. Thus the apparatus can be arranged at different inclinations and it can be rested horizontally on the ground, with the legs **29** removed or lying on the ground.

The carriage **27** comprises two pieces of plate of sheet aluminium or other suitable material, which are bent through 180° and each hooked over one of the wires. The two sections of the carriage are fastened together by a rivet **32** and are capable of pivoting about this rivet relative to each other. The width of the carriage **27** is

equivalent to the spacing between the wires **25** at the plate **14** so that in this region the carriage can move along the wires with little or no resistance, whereas further forward along the wires the carriage can move forwardly only wih resultant increased extension of the springs **24**. Hence resistance to forward motion of the carriage increases progressively with forward motion thereof.

A cord **33** of nylon or other suitable material is fastened to the carriage **27** at a central forward point thereon and a golf ball **34** is attached to the other end of the cord **33**. The length of the cord **33** is sufficient to enable the ball **34** to achieve a satisfactory trajectory after the ball has been struck by a golf club.

In use the carriage **27** is located in its rearmost position against the plate **14** and the ball **34** is placed on a tee **35** or on the ground behind the ramp **16**. The player then selects a club, takes his stance, and aims to strike the ball along the direction of the longitudinal support **11**. When using a club with a high loft the legs **29** may be set close together to raise the front end of the apparatus to the full extent, whereas when using a wood club or an iron with a low loft the legs **29** may be spread to give a low inclination or the longitudinal support may be disposed horizontally. When the ball is struck and is carried forwardly the cord **33** is pulled taut by it whereupon the carriage **27** is drawn forwardly with the ball and the cord until all the energy imparted to the ball by the club has been absorbed, mainly in overcoming the resistance to the travel of the carriage provided by the wires **25** and the springs **24**.

The greater the energy imparted to the ball the greater will be the extent to which the carriage is moved along the wires and thus the amount of movement gives a measure of the distance the same stroke would have produced on a golf course. By using the services of golf players of different capabilities and each of consistent ability it is possible to mark distance scales along the support **11** for different types of club so that a person who has struck the ball **34** with a particular club may observe from the position of the carriage in relation to the appropriate scale the distance in yards, or other appropriate linear measure, which the stroke might have been expected to achieve on a golf course.

When the ball comes to the ground after it and the carriage have stopped their forward motion the cord **33** will remain more or less taut and the distance of the cord will give an indication of whether the shot deviated to left or right. Unless the deviation is too great the cord will be drawn in most cases into one of the notches **22** in the plates **21**. Hence the person practising with the machines is given not only an indication of the distance which the stroke might be expected to achieve on a golf course, but also an indication as to whether he ball has been sliced or pulled or has otherwise deviated from the intended direction of travel, and the extent of such deviation.

It will be evident that the apparatus described enables one or a group of persons to practise golf shots and readily observe the results of changes in stance, grip and the like, without the need for a large area, without using a large supply of balls, and without requiring the services of other persons to retrieve balls and/or to observe the flight and fall of balls. As soon as a shot has been made the player can move forward, read off the distance of the shot on the appropriate scale, note the deviation of the cord in moving further forward, then pick up the ball and return it to the striking position while also returning the carriage to its rearward position. Thus many shots may be played and observed in a short time.

In addition to providing a beneficial aid to practice and the correction of faults the apparatus of the invention provides means for recreation and competition for golfers in conditions of bad weather, at night, or in other circumstances where play on a golf course is not possible. Thus competition may be arranged on the basis of recording the maximum distance with a particular club, or an actual game of golf may be simulated by marking off the distances and deviations of strokes on a scale plan of a golf course, possibly in conjunction with a putting green if one is available.

I claim:

1. A golf practice apparatus comprising:
- a longitudinal support having a forward and a rear end;
- adjustable means for positioning said support horizontally or at various inclinations with respect to a surface;
- a pair of diverging runners carried by said longitudinal support, said runners diverging toward said forward end;
- tension spring drawing the runners away from each other near said forward end;
- a carriage slidable on the runners, said carriage being connected to a flexible member having a practice ball attached thereto; and
- a bow-shaped member connected to said tension springs and fastened to said longitudinal support and extending to the side thereof opposite said tension springs.

2. A golf practice apparatus according to claim **1** wherein the carriage is constructed to engage the runners from the outer sides thereof and is dimensioned to suit the spacing of the runners at the rear end of the apparatus, whereby as the carriage moves forwardly it draws the runners towards each other and extends the said springs.

3. A golf practice apparatus according to claim **2** wherein the carriage comprises two pieces of sheet material bent through 180° and each hooked over one of the runners, the two pieces being pivotally connected together.

4. A golf practice apparatus according to claim **1** wherein the means for positioning the longitudinal support comprises a pair of legs loosely connected to the bow-shaped member whereby the said legs may be set at different angles of divergence and laid on the ground or floor with the support also on the ground or floor.

5. A golf practice apparatus according to claim **4** wherein the said legs terminate in points and have flanges to limit ground penetration.

6. A golf practice apparatus comprising:
- a longitudinal support having a forward and a rear end;
- adjustable means for positioning said support horizontally or at various inclinations with respect to a surface;
- a pair of diverging runners carried by said longitudinal support, said runners diverging toward said forward end;
- a carriage slidable on the runners, said carriage connected to a flexible member having a practice ball attached thereto; and
- a transverse rear member fixed to the rear end of the longitudinal support and to which the rear ends of said runners are connected.

7. A golf practice apparatus according to claim **6** including means whereby the resistance to movement of the carriage along the runners in the forward direction of the apparatus increases progressively with movement of the carriage in this direction.

8. A golf practice apparatus according to claim **6** wherein the diverging runners comprise wires under tension.

9. A golf practice apparatus according to claim **6** including a ramp extending over the said transverse rear member and the rear ends of the runners.

10. A golf practice apparatus comprising:
- a longitudinal support having a forward and a rear end;
- adjustable means for positioning said support horizontally or at various inclinations with respect to a surface;
- a pair of diverging runners carried by said longitudinal support;
- a carriage slidable on the runners, said carriage being connected to a flexible member having a practice ball attached thereto; and

scales carried by said support against which the position of said carriage can be read to give an indication of the distance which a golf stroke might have achieved on a golf course.

11. A golf practice apparatus comprising:

a longitudinal support having a forward and a rear end, said support member being constructed of a plurality of tubular members the ends of which are fitted together;

adjustable means for positioning said support horizontally or at various inclinations with respect to a surface;

a pair of diverging runners carried by said longitudinal support; and

a carriage slidable on the runners, said carriage being connected to a flexible member having a practice ball attached thereto.

12. A golf practice apparatus comprising:

a longitudinal support having a forward and a rear end;

adjustable means for positioning said support horizontally or at various inclinations with respect to a surface;

a pair of diverging runners carried by said longitudinal support;

a carriage slidable on the runners, said carriage being connected to a flexible member having a practice ball attached thereto; and

a transverse member connected to the forward end of said support, the upper edge of said transverse member being horizontal and having a plurality of spaced notches formed therein for the purpose of indicating to a user of the golf practice apparatus whether the practice ball has deviated to the left or right of its intended path of travel.

13. A golf practice apparatus comprising:

a relatively rigid longitudinal support member extending continuously from a forward end to a rear end;

adjustable means for positioning said support horizontally or at various inclinations with respect to a surface;

a pair of diverging tensioned wires carried by said longitudinal support, said wires diverging toward said forward end;

tension springs drawing said wires away from each other near said forward end; and

a carriage engaging said wires from the outer sides thereof and slidable on said wires, said carriage being connected to a flexible member having a practice ball attached thereto, said carriage being dimensioned to suit the spacing of said wires at said rear end of said apparatus so that as said carriage moves forwardly it draws said wires toward each other and extends said tension springs and so that the resistance to movement of said carriage along said wires in the forward direction increases progressively with movement of said carriage in this direction.

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RICHARD C. QUEISSER, Primary Examiner

JOHN K. LUNSFORD, Assistant Examiner

U.S. Cl. X.R.

273—197, 200