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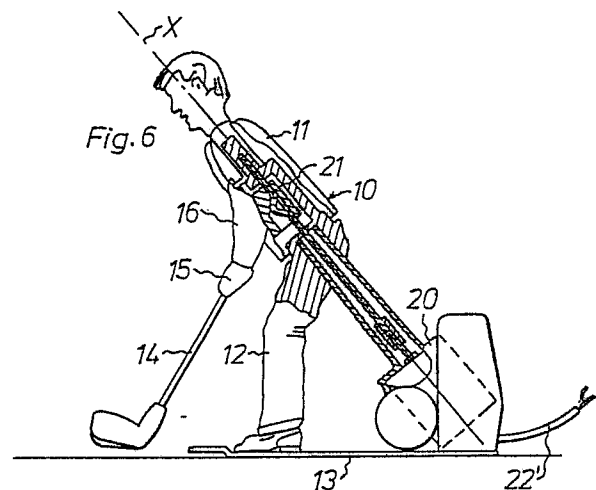
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54 **Toy golfer.**

57 A toy golfer comprises a golfer figure (10) whose upper part or torso (11) is rotatably secured to a lower or leg part (12) having a supporting plate (13) firmly positionable on a base (playing field). An electromechanical motor or transducer (20) controls the rotary movements of the golfer figure, the movable part (11) being connectible with an imitation of a golf club (14) or the like which, under the action of energy adjustable by the player, can be moved in a substantially arcuate path (Fig. 2). The golf club swung by said movable part by means of said motor is, on the one hand, swingable rearwardly in order to swing forwardly under the action of its own weight to strike the ball and, on the other hand, is swingable forwardly to putt the ball.



Description

TOY GOLFER

The present invention relates to a toy golfer according to the preamble of claim 1.

A football game is known in which the player figures have a movable leg which can be moved by means of a pressure member extending through the body of the figure and projecting through the head. Such a player figure is placed on a playing field precisely where the ball lies at the moment so that the player figure can kick the ball in the desired direction.

Games of the type football, ice-hockey and the like usually consist of a box-shaped lower part, the upper side of which constitutes the playing field, and player figures movable along slots in the board forming the field. The movements of the player figures are controlled by mechanisms of different types which all have in common that they are arranged mainly below the board surface. Although these prior art player mechanisms can be used for golf games, it is extremely difficult with such a mechanism to simulate the movements of a golf player, and furthermore the game must be played within or on the limited area defined by the playing field. US-A-2,960,796 shows an example of how it has been tried before to design the figure of a golfer based on the above technique. The golfer figure is mounted on a box-shaped support and therefore is standing slightly above the base on which it is placed. The prior art golfer figure is operated by an electric motor which, via a flexible shaft, activates the golfer's torso to the arms of which a golf club is attached. By means of the motor, a spring arrangement is tensioned, simultaneously as the torso is turned and the club is swung into raised position. Upon release of the spring, the torso and the club are swung downwards, and the golf ball is struck.

Since the tee of the prior art golfer figure, because of the support accommodating the motor and the mechanism, rises above the surrounding table surface or the like, it is not easy even approximately to simulate real golf where the tee is on a level with the surroundings. The use of a tension spring arrangement makes it difficult, not to say impossible, to vary the force of impact, and finally it is impossible to simulate a so-called putt, at any rate if the slightest likeness to reality is desired. After all, the golf club strikes the ball with the same impact, and even if the impact force could be varied, a putt ball would first roll along the upper side of the support and then over the edge of the support and continue its movement in an uncontrolled manner.

It is the object of the present invention to provide a toy golfer which can be used on an arbitrary base, directly on a table or the like, and which can tee a ball on such a base. Furthermore, the toy golfer should make it possible to vary the stroke within wide limits and according to the player's wishes. A further object is to provide a toy golfer which also can make so-called putts, i.e. short light strokes to roll the ball over shorter distances.

To sum up, it is intended to provide a toy golfer

which makes it possible to play a game very like real golf.

This object is achieved by means of the toy golfer defined by the characterising clause of the main claim.

The golf club preferably is arranged such that the torso of the golfer figure is rotatable relative to the lower part of the body at the waist. Rotation is achieved by means of an electromechanical transducer which is supplied with energy via a remote control. Because of the absence of a mechanical or rigid connection between the part operated by the player and the toy golfer, there is no uncontrollable rocking motion. Furthermore, it is essential that the energy supplied to the golf club and thus to the ball is adjustable since the energy is the parameter which determines the flight range of the ball and which must be estimated by the (real) golfer.

Preferably, the golf club is detachably connected to the remaining part of the golfer figure so that, according to the circumstances of the game, different golf clubs may be used.

In a first preferred embodiment of the invention, the electromechanical transducer, which is a rotary magnet or motor, is arranged such that, upon complete magnetisation, the golf club is fully raised and extends almost vertically upwards. If the current is interrupted or reduced, the golf club "drops" and, in this manner, strikes the ball. The proportioning of energy thus occurs via the angle of deflection and the force of gravity, respectively.

According to a further embodiment of the invention, the mechanism of the golfer figure is designed such that, in addition to the above-mentioned strokes, it can also perform so-called putts. This is achieved in that the switch connected to the electromagnet is designed for pole reversal. In this manner, the club can be swung, by means of the electromagnet, from its downwardly directed initial position in a forward motion in the direction of the stroke, thereby to strike a ball placed before the club head to simulate a so-called putt.

Further preferred characteristic features of the invention will appear from the subclaims and the following examples of preferred embodiments, reference being had to the accompanying drawings in which

Fig. 1 is a skeleton representation of the toy golfer as seen from the side;

Fig. 2 is a perspective sketch of the toy golfer, showing the rotary magnet;

Fig. 3 is a perspective representation of the toy golfer in two positions;

Fig. 4 shows a first preferred embodiment of a current control circuit;

Fig. 5 shows a second preferred embodiment of a current control circuit;

Fig. 6 illustrates, partly in section, a modified embodiment of the toy golfer according to the invention in a resting position; and

Fig. 7 shows a third preferred embodiment of

the electrical circuit diagram.

As will appear from Fig. 1, the toy golfer 10 is designed as a small male person whose lower body 12 is standing substantially vertically upright and whose torso 11 is bending forwardly at an angle relative to said lower body 12. The connection between the lower body 12 and the torso 11 is rotatable substantially about the longitudinal axis X extending through the torso 11.

From the torso 11, the arms 16 extend forwardly and downwardly, in a stance similar to that of a real golfer. The hands 15 are formed to hold a golf club 14, and the holder is detachable so that different golf clubs 14 can be inserted between the hands 15, according to the type of stroke. By means of the holder at the hands 15, the club can be nonrotatably attached by a simple push-in motion.

The axis X about which the torso 11 with the arms 16, the hands 15 and the golf club 14 rotate, has been inclined such relative to the vertical line that the golf club 14 moves in a plane E which forms an angle α with the vertical line Z. By this positioning, it is ensured that, when the golf club 14 is raised (by means of the rotary magnet described below), kinetic energy is stored which corresponds to the angle at which the club is raised.

To raise the golf club 14, a schematically shown rotary magnet 20 is provided which, in the embodiments according to Figs. 1-3, is mounted in the torso of the toy golfer 10. The rotary magnet is in the form of a motor, and its shaft which rotates only through parts of a revolution, is mounted at an angle in a mounting plate 17 connected with the lower part 12 of the toy golfer 10. The torso and the lower part preferably are made of plastic, and the toy golfer is suitably attired to conceal the joint between the torso and the lower part.

The lower part 12 of the toy golfer 10 is glued or welded to a supporting plate 13 which is large enough to impart sufficient stability to the golfer, but which does not extend to the point where the ball is placed.

Instead of fixing the shaft of the rotary magnet or motor 20 to the mounting plate 17 which is connected with the lower part of the body, and causing the rotary magnet and the torso 11 carried thereby to rotate relative to said shaft, it is of course possible, as shown in Fig. 6, that the rotary magnet 20 is stationary relative to the lower part 12, and that the supporting plate 13 is countersunk in or directly connected with said plate, and that the shaft 21 which is rotatable relative to the rotary magnet 20, carries the torso 11.

A battery casing 22 accommodating the battery required for the game may be mounted on the supporting plate 13. In Fig. 2, the battery casing 22 is in the form of a golf bag and slightly inclined rearwardly, whereby the stability of the torso 11 is maintained by the weight of the battery in spite of the higher position of the rotary magnet 20 relative to the supporting plate 13 in the embodiment shown in Figs. 2 and 3.

In the embodiment according to Fig. 6, the rotary magnet 20 is placed in a golf bag positioned on the supporting plate behind the golfer, while the battery

is contained in a separate unit (not shown) which preferably also comprises a control device connected to the rotary magnet by means of the cable 22'.

For moving the golfer, the rotary magnet or motor is provided which is designated 20 in its entirety and which is schematically shown in Fig. 4. The rotary magnet 20 comprises a rotatable armature 23 which can be attracted by a stationary coil 24 (with magnetic pole) when current is flowing through the coil 24.

To facilitate understanding, the rotary magnet in Fig. 4 is shown with but one coil and a single armature. However, dash lines indicate a further armature part and a further coil. In actual practice, use is mostly made of two-winged armatures and double coils, but also multi-winged armatures and several coils can be used. What is essential is that, when the coil or coils are currentless, they do not act on the armature, but the armature is caused to swing from the resting position as soon as the coil or coils are supplied with current.

To control the current flow and the attractive force on the armature 23, respectively, a control device is provided which is designated 25 in its entirety and which has a potentiometer 26 connected in series with the magnetic coil 24 of the rotary magnet 20 and the battery 27. The control device 25, especially the potentiometer 26, is arranged in a per se known manipulator, the handle of which operates the potentiometer 26.

In another preferred embodiment as shown in Fig. 5, a differential amplifier 28 serves as a voltage-controlled current source for the coil 24 of the rotary magnet and reduces the load on the potentiometer 26 to but a fraction of the working current. In this manner, the load on the battery 27 can be reduced.

The control device 25 can be readily supplemented to make the golfer execute also a so-called putt, i.e. a light stroke to move the ball but a short distance. To this end, the control device 25 is provided, as shown in Fig. 7, with a per se known device 29 for pole reversal. By supplying, after pole reversal, current to the rotary magnet 20 when the club is in the lower position, the club will be swung forward in the striking direction and strike the ball, but with less force than for the above-mentioned stroke.

In the embodiments illustrated in the drawings, the energy stored is kinetic energy. The rotary magnet 20 therefore has been arranged in such a manner that, in the normal position in which the golf club 14 is lowered (Figs. 1-3 and 6), the position of the armature 23 in relation to the magnetic coil 24 is the one shown in Fig. 4. When the player connects the coil 24 of the rotary magnet 20 to the circuit by operation of the potentiometer 26 of the control device (thereby reducing the resistance thereof), the armature 23 is attracted and the golf club 14 is raised. When the player releases the operating member of the potentiometer 26 and makes the coil 24 completely currentless, the club 14 descends at maximum speed and forcibly strikes the ball G (swing). If, however, the player does not release the

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potentiometer 26 completely so that a certain holding current remains, the energy transmitted to the ball will be less, and the impact on the ball will be low.

The features of the invention as described above, either alone or in optional combinations, must be regarded as essential to the invention, as far as they are novel.

Operation of the toy golfer may be both cordless and by cord. Furthermore, in another preferred embodiment of the invention, the golfer has been replaced by the figure of a polo player, an ice-hockey player, or a cricket player.

Claims

1. A toy golfer comprising a golfer figure (10) which has a movable upper part (11) forming the torso and restrictedly rotatable relative to a stationary lower part (12) forming the legs and positionable on a base by means of a supporting plate (13), said golfer figure being operable by means of an electromagnetic driving device (20) for swinging a club-like member (14) attached to said movable part away from and toward a ball (G) positioned adjacent the golfer figure, **characterised** in that said movable part (11, 14, 15, 16) is rotatable about an inclined axis (X) and balanced such that, in the unactuated position, it strives to adjust itself in a position of rest with the club head (14) adjacent the position of the ball (G) to be struck, and that a control device (25) for said driving device which comprises a rotary magnet or motor (20) operable by means of an operating member (26), is adapted to actuate said driving device (20) either to swing said movable part and the golf club (14) attached thereto rearwardly and away from said position of rest into a starting position for striking from which said movable part and the club, under the action of gravity, are caused to swing towards said position of rest to strike the ball, or to swing said movable part and the club (14) forwardly to putt a ball placed before said club.

2. A toy golfer as claimed in claim 1, **characterised** in that said control device (25) comprises means for controlling the supply of current to said driving device, said means being in the form of a potentiometer or like setting means (26) for controlling the force by which said movable part is swung rearwardly against the action of gravity, whereby the starting position for striking the ball and thus the force of impact are varied.

3. A toy golfer as claimed in claim 1, **characterised** in that said control device (25) comprises means (26) for controlling the current supplied to the rotary magnet or motor (20) of said driving device, said means being adapted to completely release said movable part after said starting position has been reached, or to partly counteract the action of

gravity by maintaining a reduced supply of current, thereby to control the force of impact.

4. A toy golfer as claimed in claim 1, **characterised** in that said control device (25) for said driving device is adapted to reverse the direction of said driving device in order to swing said movable part and said club in the direction of striking.

5. A toy golfer as claimed in claim 1, **characterised** in that the golf club (14) which is exchangeably and removably attached to said movable part (11, 15, 16), projects beyond the supporting plate in its position of rest and contacts the base on which the golfer figure is positioned.

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