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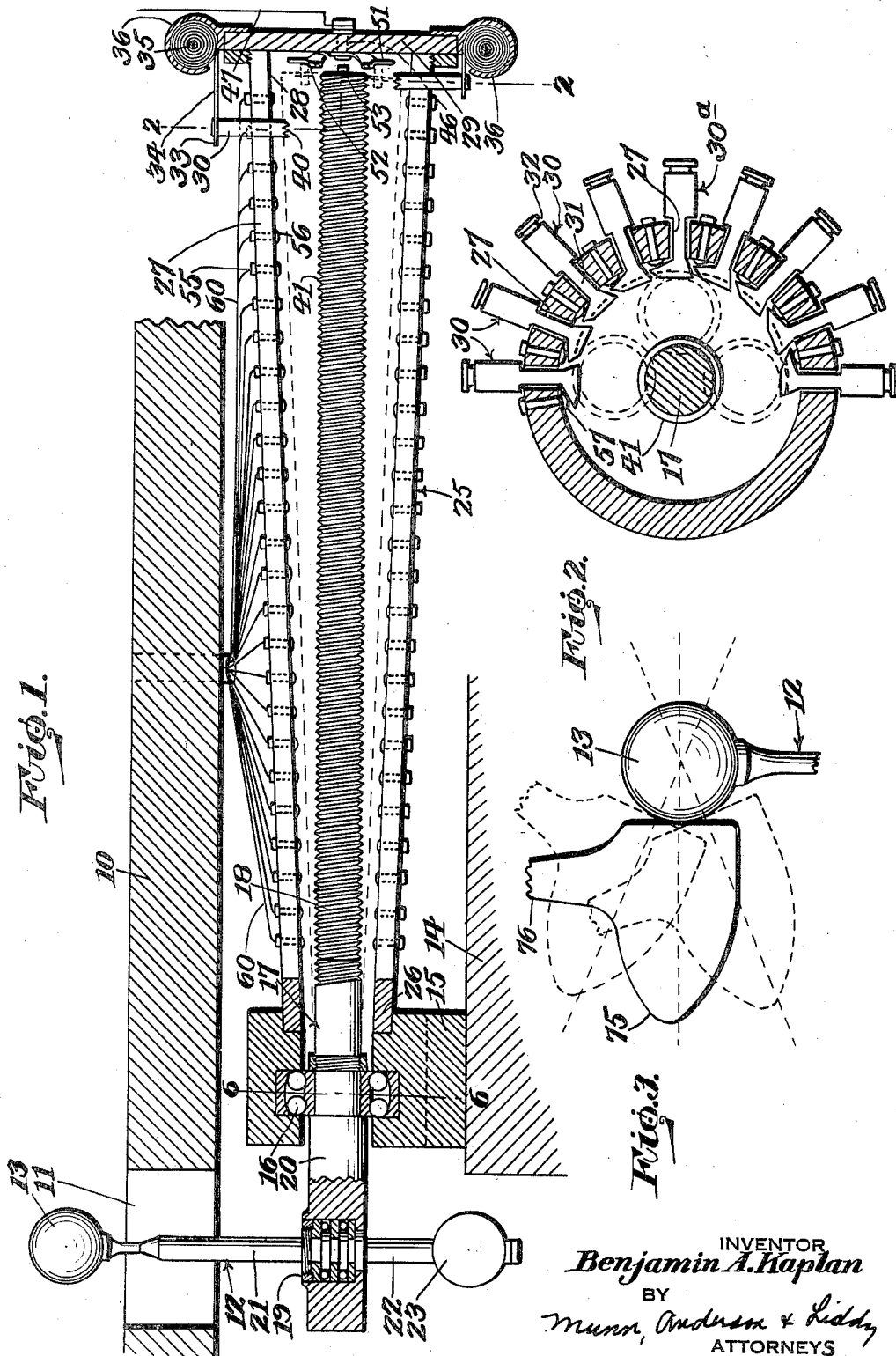
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INDOOR GOLF GAME

Filed Feb. 9, 1939

2 Sheets-Sheet 1



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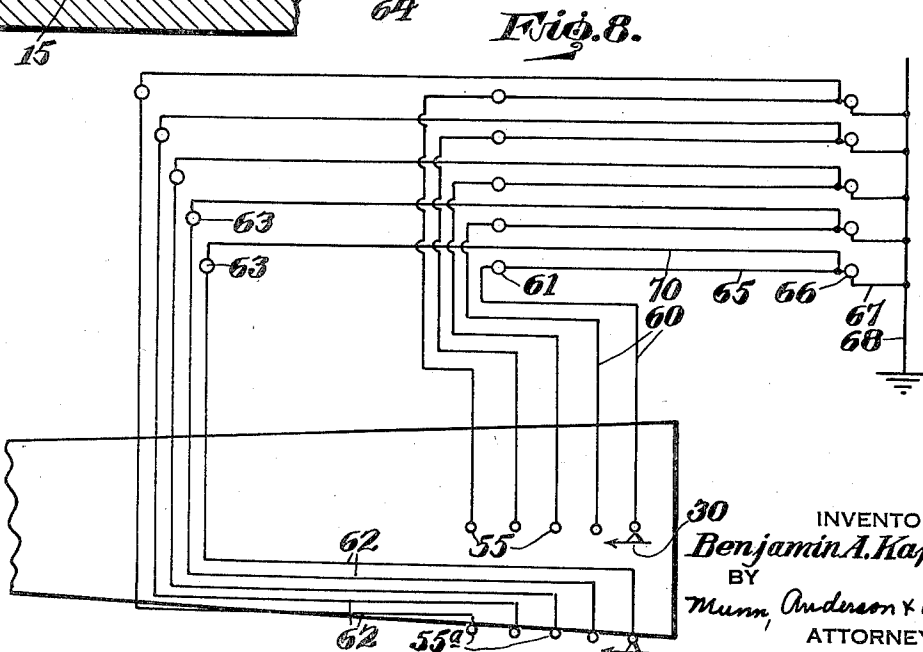
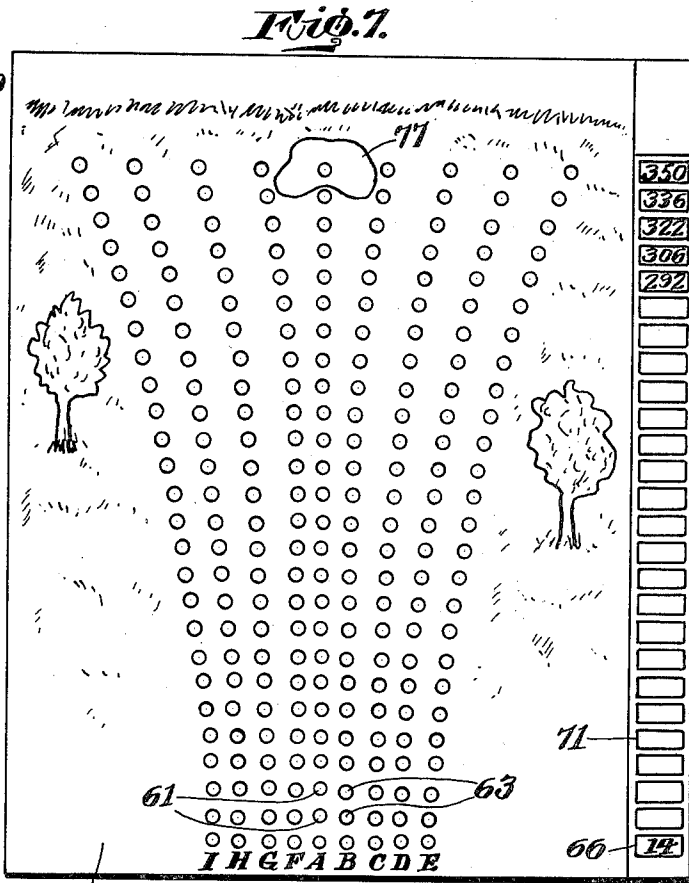
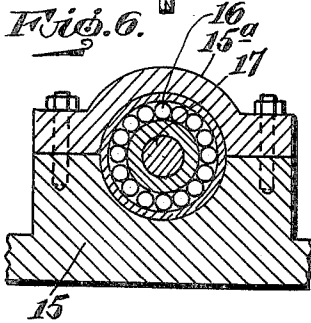
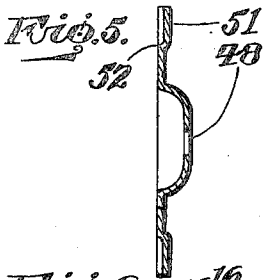
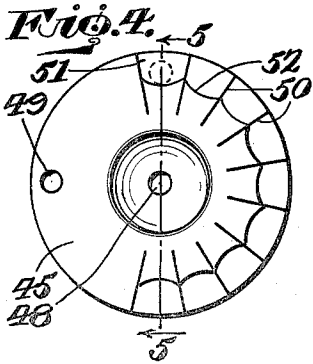
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INDOOR GOLF GAME

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10 Claims. (Cl. 273—35)

This invention relates to indoor golf.

An object of the invention is the provision of an arrangement whereby a golfer will have visual indication of the direction of flight of the ball after being struck and will also have visual indication of just how far the ball would travel at each stroke of the club, the visual indications being located upon a background representing a portion of a golf course with the hazards being indicated.

Another object of the invention is the provision of a device for aiding in correcting the stroke of a golfer while indicating to him the direction of flight of the golf ball in the distance covered by the ball, the ball in this case being connected to a revolving arm which in turn is connected to a shaft universally mounted between its ends so that the inner free end of the shaft may swing in a plurality of directions for closing a plurality of circuits for illuminating lamps upon a background with the lamps indicating the direction of flight of the ball and also the distance traveled by the ball.

A further object of the invention is the provision of a device for aiding a golfer in correcting a mistake in his stroke in which the mechanism will be set in operation for indicating to him not only the direction of flight of the ball but the distance the ball should travel in accordance with the impact of the golf club head on the ball.

A still further object of the invention is the provision of a device for indicating to a golfer the angle of diversion of the flight of the ball when struck in a particular manner from a line passing through the tee and the hole in the green, the device including a rod rotatably mounted on the outer end of a shaft which is universally mounted for rotation and rocking movement, a simulation of a golf ball being applied to one end of the rod while a weighted member is applied to the other end of the rod, the inner or free end of the shaft being located within a conically-shaped housing with a plurality of longitudinally disposed rows of contacts adapted to be engaged by a conductor which has threads adapted to mesh with a worm formed on the portion of the shaft located within the housing so that when the shaft is revolved the conductor will be moved longitudinally inwardly in tracks and will engage the row of contacts successively for illuminating lamps on a background depicting one of the holes of a golf course, a plurality of the conductors being located circumferentially of the housing so that when the simulated

ball on the end of the rod is struck the shaft will be revolved and the inner end of the shaft will be tilted in a particular direction, depending upon the manner in which the ball has been struck by the golf club head so that the threads on the shaft meshing with the threads on the conductor will move the conductor along the predetermined path and the illumination of the lamps connected with the contacts engaged by the conductor will indicate the direction of flight of the ball and also the distance since the number of revolutions of the shaft will depend upon the force by which the simulated ball has been struck and the angle at which the golf club head strikes the ball.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawings forming a part of the specification; nevertheless, it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications as define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a vertical longitudinal section of the operating mechanism of my device,

Figure 2 is a transverse vertical section taken along the line 2—2 of Fig. 1,

Figure 3 is a fragmentary view in elevation of a simulated golf ball connected with a revolving and rotating rod showing some of the positions of the golf club head when it contacts the simulated ball,

Figure 4 is a view in elevation of a supporting means, for the free end of a revolving shaft in a number of positions,

Figure 5 is a vertical section taken along the line 5—5 of Fig. 4,

Figure 6 is a transverse vertical section taken along the line 6—6 of Fig. 1,

Figure 7 shows more or less diagrammatically the representation of a portion of a golf course,

Figure 8 shows more or less diagrammatically a wiring diagram showing the connections between the lamps depicting paths and various switches for controlling the illumination of the lamps.

Referring more particularly to the drawings, 10 designates a floor of a room which has an elongated opening 11 through which projects a rod 12 and a ball 13 which is made in simulation of a golf ball. The ball 13 is rigidly connected to the rod 12 in any approved manner.

A base member 14 is located below the under-

face of the floor 10 and upon which is rigidly mounted a block 15. Located within the block is a bearing 16 in which is mounted a shaft, generally designated by the numeral 17. The bearing is of the universal type whereby the shaft may be revolved therein but which will permit the oscillation of the long portion 18 of the shaft in a plurality of radial directions.

The rod 12 is rotatably mounted in a bearing 19 carried by the short end 20 of the shaft 17 and this portion of the shaft is enlarged. The rod 12 extends upon opposite sides of the bearing 19 and this rod is divided into a long arm 21 and a short arm 22. A weight 23 is secured to the outer end of the short arm 22 and balances the weight of the long arm 21 and the ball 13 and the weight of the rod 12 together with the weights of the members 13, 23 and the short portion 20 of the shaft 17 perfectly balances the weight of the long portion 18 of the shaft 17 so that the shaft will be normally supported in a horizontal position by the bearing 16, as shown in Fig. 1.

A conically-shaped housing generally designated by the numeral 25, embraces the long portion of the shaft 18 and has its inner wall progressively spaced from the surface of the long portion 17 of the shaft 18. The inner or smaller end of the housing is rigidly secured to the block 15, as shown at 26, while the outer end is supported in any approved manner. This housing is provided with a plurality of longitudinal slots 27 which extend inwardly from the outer enlarged end 28 of the housing to a point where the housing is connected to the block 15. These longitudinal slots are spaced from each other around the circumference of the housing. The outer end of the housing is closed by a disc 29.

As shown more particularly in Figs. 1, 2 and 3, a conductor, generally designated by the numeral 30, has a reduced portion 31 received by a slot 27 and these conductors are movable longitudinally of the slots from the outer enlarged end of the housing to the inner end for a purpose which will be presently explained.

The outer end of the conductor is provided with a groove 32 which receives one end 33 of a spring 34. This spring is connected to a rod 35 mounted in the casing 36 and fixed to said casing and the spring is normally housed within the casing when the conductors are located adjacent the outer end of the housing 25. When the conductors 30 are moved from the outer end to the inner end the spring is withdrawn from the housing but when the conductors are released the spring will wind upon the rod 35 and draw the conductors from the inner end to the outer end and to the position shown in Fig. 1. The housings 36 are secured to the disc 29 and are radially disposed at the periphery of the disc.

The inner end of each conductor is provided with a segmental worm gear 40 and this worm gear is adapted to mesh with a worm 41 formed of the long portion 18 of the shaft 17.

The shaft is tilted or rocked when the ball 13 has been struck by a golf club head. When the head is struck the shaft 17 is revolved and the inner end of the shaft is likewise tilted so that when the revolving worm 41 engages the segmental gear 40 with a conductor 30 the conductor will be moved along its respective slot 27 from the outer end to the inner end of the housing.

A spring metal disc 45 is shown more particularly in Figs. 4 and 5, is secured to the disc or closure 29 by a bolt 46 which also acts as a

binding post for a wire 47. A bolt passes through an opening 48 located centrally of the disc 45 and a second perforation 49 is formed in the disc to receive a screw for connecting the disc to the closure 29 and preventing rotation of the disc 45.

It will be noted that one portion of the disc is provided with a plurality of radial slits 50 to form spring fingers 51. These spring fingers are indented, as shown at 52, to form pockets to receive a reduced portion 53 at the end of the shaft 17 so that when the shaft is tilted after the ball 13 has been struck this reduced portion 53 will engage one of the pockets and maintain the shaft in position so that when the worm 41 is revolved this worm will be maintained in engagement with the teeth of the segmental gear 40.

A series of contacts 55 are mounted in spaced relation along each slot 27, as shown in Figs. 1 and 2, and the inner projecting ends 56 of these contacts are adapted to be engaged by an inclined portion 57 formed on the inner end of each conductor 30 after the conductor moves along its respective slot 27 so that when the reduced end 53 of the shaft 17 is located within one of the pockets 52 of the disc 45 electrical communication is made between the wire 47 and the contacts 55.

A wire 60 extends from the outer end of each contact 55, as shown more particularly in Fig. 1.

Each wire connects a contact 55 with an associated lamp of the series indicated at A in Fig. 7. A parallel series of contacts indicated by 55a in Fig. 8 are connected by wires 62 with lamps 63 which are located in series indicated by the letter B on a board 64.

It will be noted that there are nine conductors 30 and therefore there are nine series of lamps on the board indicated by the letters from A to I, inclusive.

A wire 65 connects the lamp 61 in series with a lamp 66 and these lamps are located in boxes at one side of the board as shown in Fig. 7. A wire 67 is connected to a ground wire 68 and the wire 67 is also connected to the lamp 66.

A plurality of wires 70 are arranged to connect each of the lamps 63 with a plurality of lamps 66 so that when the circuit is closed to the contacts 55 and the conductors 30 the lamps 61 in row A and the lamp 66 will be illuminated. When a conductor 30 associated with the contacts 55 is moved along the housing it will close the circuits through said contacts to the lamps 63 and also to the lamps 66 and these circuits will be closed consecutively as the conductor successively engages the contacts located adjacent the guide in which the conductor is moved.

It will be noted that nine series of lamps are located upon the board 64 and one series of lamps 61 are consecutively illuminated as the conductor moves along its respective guide. At the same time the lamps 66 are likewise illuminated and since the lamps are located in boxes upon which numerals are placed, the golfer who is practicing can inspect the board which is directly in front of him and located at an angle to the floor of the building and he can tell approximately what path the ball will take in accordance with the manner in which the element 13 is struck and the distance that the conductor travels along its guide will be indicated by the numerals in the lamp housing 71, since these numerals indicate the yardage that the ball would ordinarily have traveled if it had been placed on a golf course. The series of lamps indicated by the letters represent the course that the ball will

take in its flight after it has been driven from the tee.

When the element 13 is struck by the golf club head the rod 21 may not only be rotated in the bearing 19 but it will revolve as will be the shaft 20 and likewise the worm 41. The shaft will also be tilted and the tilting of the shaft will depend upon the contact between the head 75 of the golf club 76 with the element 13. If the stance of the golfer is correct the worm 41 will be tilted in a horizontal direction so that it will engage the gear at the inner end of the conductor 30a which is located in a horizontal plane as shown in Fig. 2.

Since the shaft 17 and the worm 41 are revolving, the intermeshing worm gear on the conductor 30a will cause this conductor to move along the slot or guide 27 and the member 57 will successively engage the contacts 56 and consequently cause the lamps in the series indicated at A (Fig. 7) to be illuminated.

If, on the other hand, the golfer does not strike the ball properly the ball in its flight over the course will assume any of the other positions to one side of the series A and the lamps in one of the other series then will be illuminated and the golfer would have substantially a picture of the flight of his ball as indicated by the lamps on the board 64. Since the lamps in the boxes 71 are also lighted successively the golfer will be able to determine approximately the distance that the ball will travel. These boxes are marked with the numerals beginning with 14 and increasing in arithmetical progression up to approximately three hundred and fifty yards which approximates the distance from the tee to the green, indicated by the numeral 77.

When the shaft 17 is located in a horizontal position and at rest the metal projection 53 at the end of the shaft and adjacent the disc 45 is out of contact with the disc and therefore the circuit is broken at this point.

While I have shown springs 34 for returning the conductors 30 to their normal inoperative position at the outer enlarged end of the housing 25 it will be appreciated that these conductors may be moved to this position manually if so desired and where it is found practical to do so.

The arm 22 is shorter than the arm 21 of the rod 12 so that when this rod is revolved after the ball 13 has been struck the balancing weight 23 will move through a circle which is below the top of the floor 10 whereby only the ball 13 will appear above the floor once every revolution. Spacing of the contacts and the number of these contacts will depend upon the number of revolutions of the rod 12 when it is struck full force so that a conductor 30 will travel the full length of its guide or, in other words, the housing is of such a length that a conductor will travel a maximum distance to represent a distance of approximately three hundred and fifty yards for the flight of the ball.

As shown more particularly in Fig. 6 the bearing 16 is held in place by a cap 15a bolted to the block 15.

I claim:

1. An indoor golf game comprising a shaft, a bearing mounting the shaft for rotation and universal oscillation adjacent one end and dividing the shaft into a long and short portion, a radial rod rotatably mounted in the short portion of the shaft, a ball on one end of the rod adapted to be struck by a golf club head to cause tilting and rotation of the shaft, a balancing weight at the other end of the rod, the long portion of the

shaft being provided with a worm, a housing enclosing the long portion of the shaft and provided with a plurality of longitudinal guides, an electric conductor in each guide, each conductor provided with a segmental worm gear adapted to mesh with the worm on the shaft when the long portion of the shaft is tilted into engagement with said worm gear, a series of spaced contacts on the housing adjacent each guide and consecutively engaged by the respective conductor when said conductor is moved along its guide by the revolving worm, a plurality of lamps, a lamp for each contact and in circuit with said contact and with the worm, means connecting each lamp and the worm with a source of current, and means retaining the long portion of the shaft in tilted position when said worm has been moved into engagement with a gear on a conductor.

2. An indoor golf game comprising a shaft, a bearing mounting the shaft for rotation and universal oscillation adjacent one end and dividing the shaft into a long and short portion, a rod projecting from the opposite sides of the short portion of the shaft, a ball on one end of the rod adapted to be struck by a golf club head to cause tilting and rotation of the shaft, a balancing weight at the opposite end of the rod, a worm on the long portion of the shaft, a housing provided with a plurality of longitudinal guides, the long portion of the shaft being located normally at the center of the housing, an electrical conductor in each guide, each conductor provided with a segmental worm gear adapted to mesh with the worm when the long portion of the shaft is tilted into engagement with said worm gear, a series of spaced contacts on the housing adjacent each guide and consecutively engaged by the conductor when said conductor is moved along its respective guide by the revolving worm, a lamp for each contact and in circuit with said contact and with the worm, means connecting each lamp and the worm with a source of current, and means retaining the long portion of the shaft in tilted position when the worm has been moved into engagement with a gear of a conductor.

3. An indoor golf game comprising a shaft having a worm at one end, a bearing mounting the shaft for rotation and universal oscillation, a rod projecting from opposite sides of the shaft adjacent the bearing, a ball on one end of the rod adapted to be struck by a golf club head to cause tilting and rotation of the shaft and worm, a balancing weight at the other end of the rod, a housing enclosing the worm and provided with a plurality of longitudinal guides, an electrical conductor in each guide, each conductor provided with a segmental worm gear adapted to mesh with the worm, the shaft and worm are tilted into engagement with said worm gear, a series of spaced contacts on the housing adjacent each guide and consecutively engaged by the respective conductor when said conductor is moved along its guide by the revolving worm, a lamp for each contact in circuit with said contact and with the worm, means connecting each lamp and the worm with a source of current, and means retaining the worm and the shaft in tilted position when said worm has been moved into engagement with a gear of a conductor.

4. An indoor golf game comprising a shaft having a worm at one end, a bearing located between the worm and shaft and mounting the shaft and worm for rotation and universal oscillation, a rod projecting from opposite sides of the shaft adjacent the bearing, a ball on one

end of the rod adapted to be struck by a golf club head to cause tilting and rotation of the shaft and worm, a housing enclosing the worm and provided with a plurality of longitudinal guides, an electrical conductor in each guide, each conductor provided with a segmental worm gear adapted to mesh with the worm when the shaft and worm are tilted into engagement with said worm gear, a series of spaced contacts on the housing adjacent each guide and consecutively engaged by the respective conductor when said conductor is moved along its guide by the revolving worm, a lamp for each contact in circuit with said contact and with the worm, means connecting each lamp and the worm with a source of current, and means retaining the worm and the shaft in tilted position when said worm has been moved into engagement with a gear of a conductor.

5. An indoor golf game comprising a shaft, a bearing mounting the shaft for rotation and universal oscillation adjacent one end and dividing the shaft into a long and short portion, a rod connected to the short portion of the shaft, a ball on the rod adapted to be struck by a golf club head and cause tilting and rotation of the shaft, the weight of the shaft at one side of the bearing balancing the remaining portion of said shaft so that the shaft will lie normally in a longitudinal plane, a housing enclosing the long portion of the shaft and provided with a plurality of longitudinal guides, an electrical conductor in each guide, cooperating means on the long portion of the shaft and the conductor for causing movement of the conductor along a guide when the shaft is tilted into engagement with said conductor and revolved, a series of spaced contacts on the housing adjacent each guide and consecutively engaged by the respective conductor when said conductor is moved along its guide by the revolving shaft, a plurality of rows of lamps, a lamp for each contact and in circuit with said contact and with the shaft, means connecting each lamp and the shaft with a source of current, and means retaining the long portion of the shaft in position when said portion has been moved into engagement with a conductor.

6. An indoor golf game comprising a shaft, a bearing mounting the shaft for rotation and universal oscillation adjacent one end and dividing the shaft into a long and short portion, a rod rotatably mounted in the short portion of the shaft, a ball on one end of the rod adapted to be struck by a golf club head and cause tilting and rotation of the shaft, the shaft being balanced for a normal horizontal position, a worm on the long portion of the shaft, a plurality of guides spaced progressively from the long portion of the shaft and extending from points adjacent the bearing, an electrical conductor in each guide, each conductor provided with a segmental worm gear adapted to mesh with the worm on the shaft when the long portion of the shaft is tilted into engagement with said worm gear, a series of spaced contacts arranged adjacent each guide and consecutively engaged by an associated conductor when said conductor is moved along its guide by the revolving worm, a plurality of series of lamps, a lamp for each contact and in circuit with said contact and with the worm, means connecting each lamp and the worm with a source of current, and means retaining the long portion of the shaft in position when said portion has been moved into engagement with a gear on a conductor.

7. An indoor golf game comprising a shaft, a bearing mounting the shaft for rotation and universal oscillation, a rod mounted at one end of the shaft, a ball on one end of the rod adapted to be struck by a golf club head and cause tilting and rotation of the shaft, a balancing weight at the other end of the rod, the other end of the shaft being provided with a worm, a plurality of longitudinal guides surrounding the last-mentioned end of the shaft, an electrical conductor in each guide, each conductor provided with a segmental worm gear adapted to mesh with the worm on the shaft when said shaft is tilted into engagement with said worm gear, a series of spaced contacts arranged adjacent each guide and consecutively engaged by an associated conductor when said conductor is moved along its guide by the revolving worm, a plurality of series of lamps, a lamp for each contact and in circuit with said contact and with the worm, means connecting each lamp and the worm with a source of current, and means retaining the long portion of the shaft in position when said portion has been moved into engagement with a gear on a conductor.

8. An indoor golf game comprising a shaft, a bearing mounting the shaft intermediate the ends thereof for rotation and universal oscillation, means on one end of the shaft adapted to be struck by a golf club head for causing rotation and tilting of the shaft, a conical housing enclosing the other end of the shaft, a plurality of electrical conductors carried by the outer end of the housing, means guiding each conductor in parallel relation with the shaft longitudinally along the shaft, cooperating means between the shaft and the conductors for causing said conductors to be moved along the guiding means, a series of spaced contacts along each guiding means adapted to be engaged successively by the respective conductor, a conductor adapted to be engaged by the shaft when the shaft has been tilted against the conductor, a plurality of series of lamps, a lamp for each contact and in circuit with said contact and the shaft, means connecting each lamp and the shaft with a source of current, and means retaining the shaft in position when said shaft has been moved into engagement with a conductor.

9. An indoor golf game comprising a shaft, means mounting the shaft for rotation and universal oscillation, means on the shaft adapted to be struck by a golf club head for causing rotation and tilting of said shaft, means holding the shaft in its tilted position, a plurality of conductors arranged around the shaft, means guiding each conductor in a path longitudinally of said shaft, cooperating means between each conductor and said shaft for causing the conductor to be moved along its respective path, a plurality of series of lamps representing paths through which a golf ball may travel, a series of contacts arranged along each guiding means, each series of lamps being electrically connected with a selected series of contacts, means including the shaft and holding means for electrically connecting the lamps and the conductors with a source of current.

10. An indoor golf game comprising a shaft, means mounting the shaft for rotation and universal oscillation, means on the shaft adapted to be struck by a golf club head for causing rotation and tilting of said shaft, means holding the shaft in its tilted position, a plurality of conductors arranged around the shaft, means

5 guiding each conductor in a path longitudinally of said shaft, cooperating means between each conductor and said shaft for causing the conductor to be moved along its respective path, a plurality of series of lamps representing paths through which a golf ball may travel, a series of contacts arranged along each guiding means, each series of lamps being electrically connected

with a selected series of contacts, means including the shaft and holding means electrically connecting the lamps and the conductors with a source of current, and a series of lamps, said lamps being in series with the first-mentioned lamps and with the contacts for indicating the distance the golf ball may travel. 5

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