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A. CAMERON

3,359,005

IMAGE PROJECTOR ACTUABLE BY GOLF BALL ROTATION TO  
INDICATE DIRECTION AND INTENSITY OF GOLF STROKE

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3 Sheets-Sheet 1

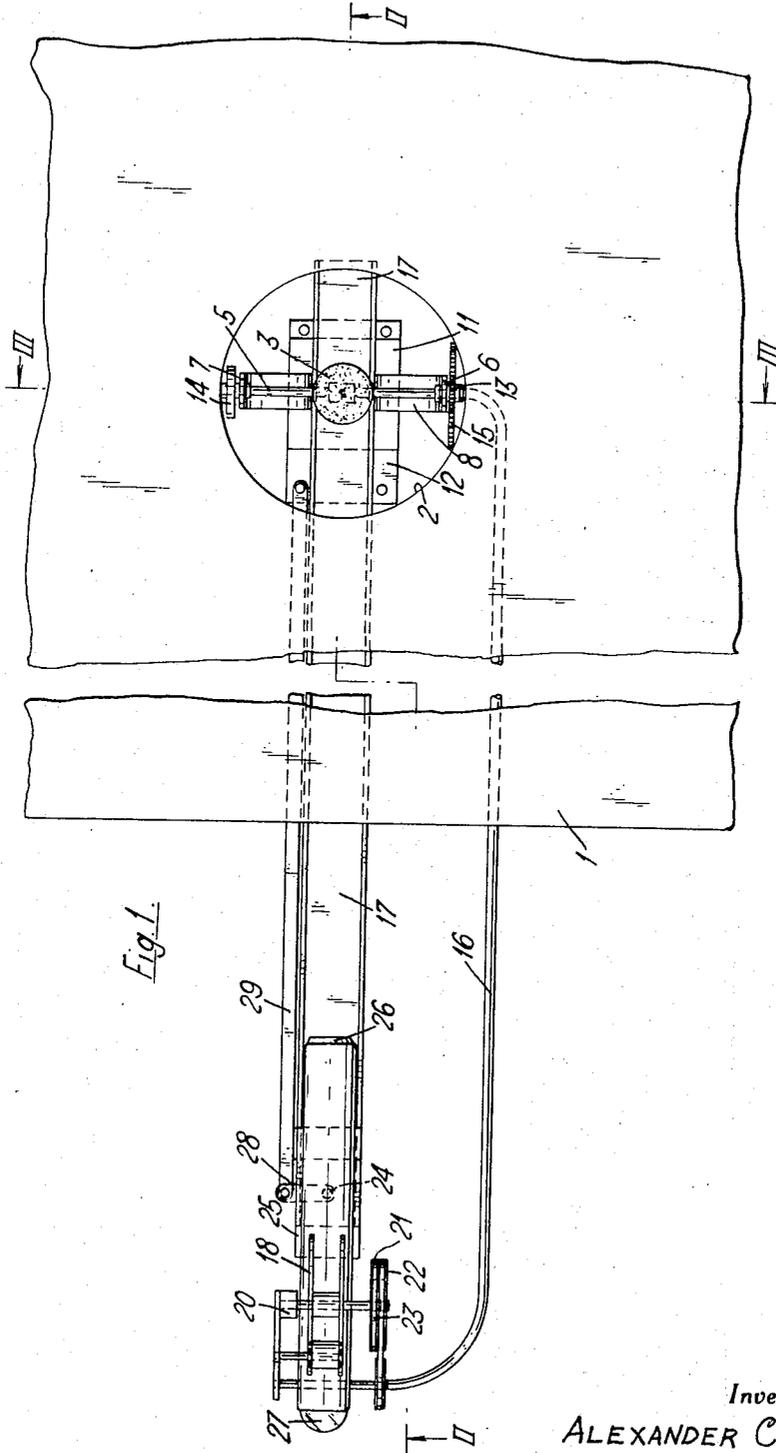


Fig. 1.

Inventor  
ALEXANDER CAMERON  
By  
Irvin S. Thompson  
Attorney

Dec. 19, 1967

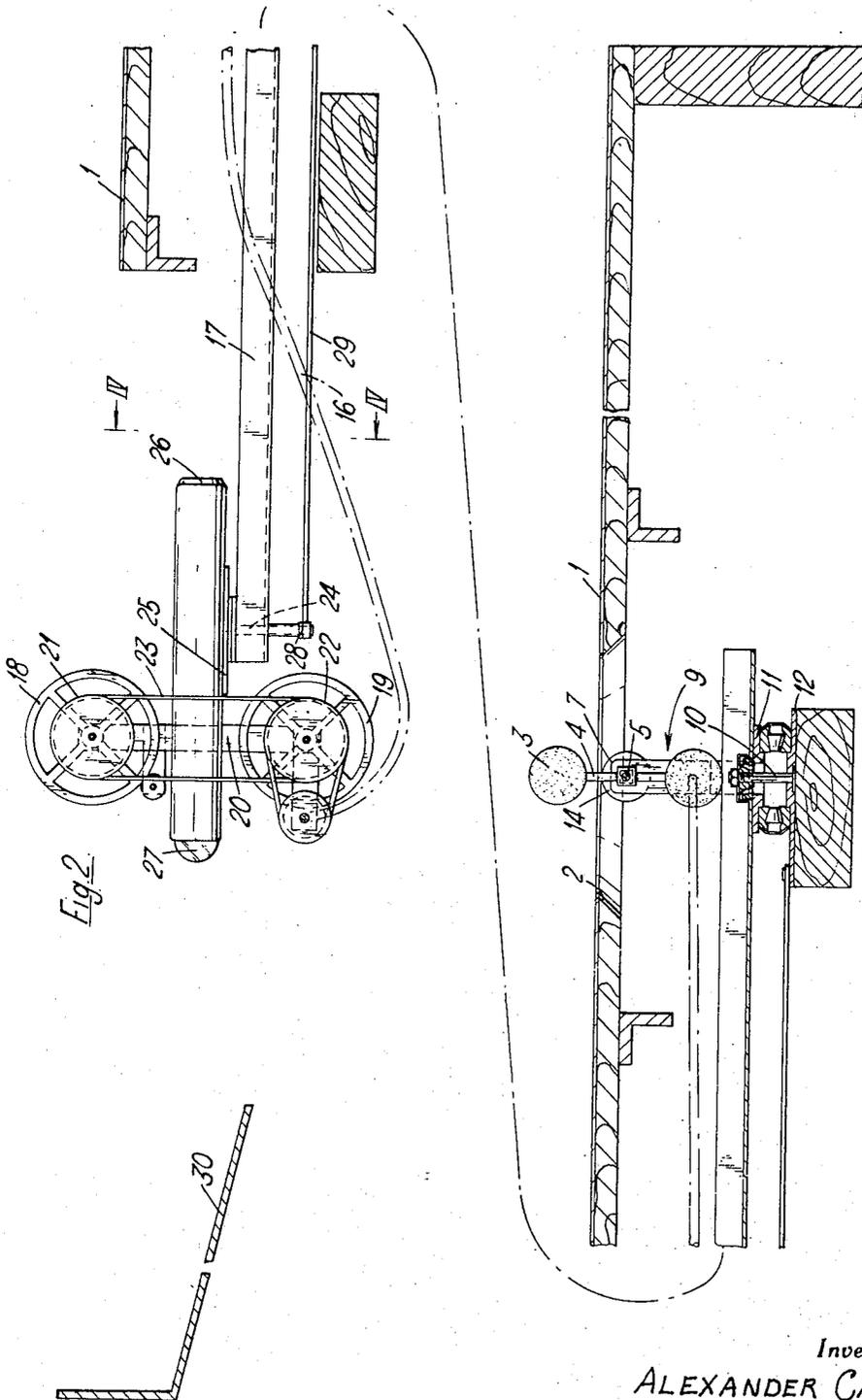
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IMAGE PROJECTOR ACTUABLE BY GOLF BALL ROTATION TO  
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3 Sheets-Sheet 2



Inventor  
ALEXANDER CAMERON  
By  
*Irvin S. Thompson*  
Attorney

Dec. 19, 1967

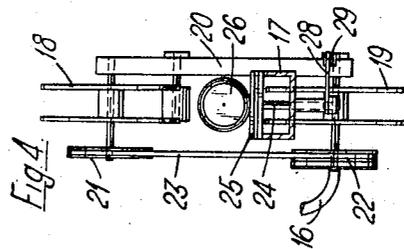
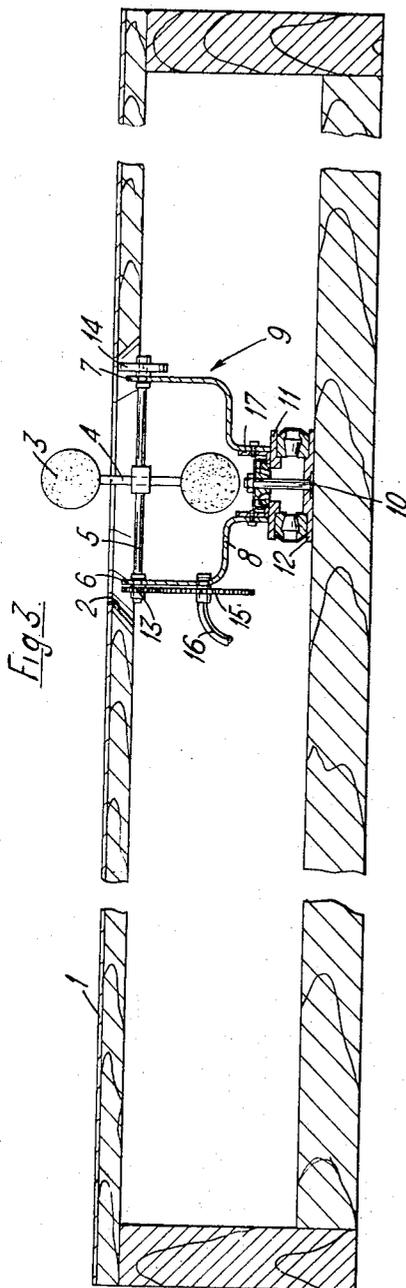
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IMAGE PROJECTOR ACTUABLE BY GOLF BALL ROTATION TO  
INDICATE DIRECTION AND INTENSITY OF GOLF STROKE

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3 Sheets-Sheet 3



Inventor  
ALEXANDER CAMERON

By  
Irwin S. Thompson  
Attorney

1

3,359,005

**IMAGE PROJECTOR ACTUABLE BY GOLF BALL ROTATION TO INDICATE DIRECTION AND INTENSITY OF GOLF STROKE**

Alexander Cameron, 35 Warden Road,  
Glasgow W. 3, Scotland

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7,564/63

6 Claims. (Cl. 273—185)

This invention relates to a game of skill, directed in particular to indoor golf.

According to the present invention I provide a game of skill comprising a member adapted to be struck by the player, a mounting for said member adapted to permit angular rotation of the member about a substantially horizontal axis when the member is struck normal to said axis, said mounting also being adapted simultaneously to rotate about a substantially vertical axis when the member is struck at an angle, and means operatively connected to the mounting to indicate the power of the stroke and any angular deviation of the stroke from the straight.

Preferably the indicating means consists of a film projector mounted for pivoting movement about the axis of rotation of the mounting and including a film feed operable by said angular rotation of the member, and a screen adapted to receive from the projector, an image indicating the power of the stroke and its deviation if any from the straight.

A preferred embodiment of the invention is directed to a device for playing indoor golf comprising a golf ball adapted to be struck by the player, a mounting for said golf ball adapted to permit angular rotation of the golf ball about a substantially horizontal axis when the golf ball is struck normal to said axis, and adapted simultaneously to rotate about a substantially vertical axis when the golf ball is struck at an angle, a film projector operatively connected to said ball and mounting in such manner that the angular rotation of the ball actuates the film in the projector and the rotational movement of the mounting effects lateral displacement of the projector, a screen for receiving the projected film image provided with a fixed target point, and film of a golf course, the objective of the game being to strike the ball with power and accuracy and a minimum of slicing action to operate the film in the projector and bring the projected image of the flag pins of each green into coincidence with the fixed target on the screen.

An embodiment of the invention will now be described, simply by way of example with reference to the accompanying drawings, in which:

FIG. 1 is a plan view of a device for playing indoor golf.

FIG. 2 is a sectional front elevation of the device of FIG. 1 on the line II—II of FIG. 1.

FIG. 3 is a sectional side elevation of the device on the line III—III of FIG. 1.

FIG. 4 is a side elevation of film projection means forming part of the device of the invention on the line IV—IV of FIG. 2.

A preferred embodiment of the invention is directed to a device for playing indoor golf and includes a two-decked horizontal rectangular-shaped standing platform 1, which is provided in its upper deck with an aperture 2 located towards the center of the platform 1. A golf ball 3 projects from the aperture 2 and is axially mounted on one end of a spindle 4, which in turn is rigidly attached intermediate of its length to the center of a horizontal axle 5 located below the upper deck of the platform 1. The horizontal axle 5 extends between and is rotatably mounted on the vertical support limbs 6, 7 of a substan-

2

tially U-shaped separated bracket 8 which forms part of a mounting 9 located for rotation on a vertical pivot pin 10. A second golf ball may be attached to the free end of spindle 4 for balancing purposes.

5 The lower ends of the limbs 6, 7 of the bracket 8 are keyed to a rotatable horizontal base plate 11 mounted on said pivot pin 10. Pivot pin 10 at its foot is attached to a fixed base plate 12 which is clamped to the lower deck of platform 1. Roller bearings are inserted between 10 the base plates 11 and 12, and the arrangement is such that the assembly of spindle 4, axle 5, bracket 8 and base plate 11, forms the mounting 9 for golf ball 3 which rotates on pivot pin 10.

One end of axle 5 has attached thereto a small gear 15 wheel 13 and the other end is fitted with a counterweight wheel 14. The teeth of gear wheel 13 mesh with the teeth of a larger gear wheel 15 mounted immediately below gear wheel 13 on the same bracket limb 6. One end of a flexible drive 16 is attached to the larger gear wheel 15, 20 the other end of the drive being connected to target indicating means in the form of a film projection device and screen.

When the golf ball 3 receives a glancing blow from a club and undergoes slicing action due to spin, the force normal to the ball causes the axle 5 to rotate with meshing of the gear wheels 13 and 15, thus actuating the flexible drive 16. The force delivered at an angle to the golf ball 3 causing the spin action, actuates the mounting 9 25 so that it rotates on pivot pin 10.

The mounting 9 for the golf ball 3 is operatively connected to the target indicating means by means of the flexible drive 16 and a horizontal elongated swivel arm 17, one end of which is firmly attached to the lower ends 30 of the limbs 6, 7 of the bracket 8. Roller bearings are also inserted between the swivel arm 17 and the pivot pin 10. The swivel arm 17 extends horizontally from the mounting between the decks of the standing platform 1 to project therefrom for a considerable distance to connect to the film projection device.

The film projection device comprises two reels 18, 19 40 for film, which are axially mounted on a vertical support bar 20. Mounted co-axially with reels 18, 19 are two reel driving wheels 21, 22, the lower wheel 22 being operatively connected to the free end of flexible drive 16. A pulley belt 23 passes around both driving wheels 21 and 22 to synchronise the speed of the wheels and the reels 18 and 19.

The end of swivel arm 17 remote from the mounting 9 45 has mounted thereon by means of a vertical spindle 24 rotatably mounted on said arm, a horizontal swivel plate 25 which supports a lamp 26 and focussing lens 27 of the film projection device. The vertical spindle 24 has keyed to its lower end, one end of a connecting rod 28, the other end of said rod being pivotally mounted to one 50 end of a servo lever 29, the other end of the lever 29 being anchored to the fixed plate 12.

By means of servo lever 29, the film projection device and therefore the film image can be displaced laterally without angular distortion of the image, as on rotation of 55 the arm 17, the servo lever 29 and connecting rods 28 will cause the swivel plate 25 to rotate relative to the arm thus ensuring that the axis of the focussing lens in a displaced position of the lens is parallel to the axis of the lens in its original position.

A screen is erected at a distance from the projector 60 device, which screen consists essentially of an elongated angled surface 30 terminating in a vertical portion remote from the projector. A circular aiming point is marked centrally of the angled portion of the screen towards the projector.

The device operates as follows. A film of each hole of a

golf course is fitted to reels 18, 19 and the lamp 26 of the projector is switched on. The image of one hole, i.e., green and fairway, is projected onto the screen, the green of the projected image including a flag pin marking the hole, and being positioned at the top of the vertical portion of the screen. The address position is taken up by a person standing on platform 1 and the golf ball 3 is struck with a club in the normal manner. A perfect stroke with no slicing action, results in the angular rotation of the golf ball being transmitted through gear wheels 13 and 14, to the flexible drive 16. The drive 16 actuates the driving wheels 21 and 22 and so the reels 18, 19 and the film which passes through the projector. In this manner the flag pin in the projected image moves down the screen closer to the aiming circle on the screen.

A poor golf stroke however involving slicing action actuates the mounting and causes the swivel arm 17 to effect lateral displacement of the projector and so also the image of the flag pin on the screen, which will now lie to one side of the target.

It will be appreciated that skill is required to bring the flag pin image into coincidence with the aiming circle and golf shots playable in an actual round of golf may be simulated on the device according to the invention.

I claim:

1. A golf game comprising a golf ball adapted to be struck by a player, a mounting for said ball permitting angular rotation of the ball about a substantially horizontal axis spaced from the ball and simultaneous rotation about a substantially vertical axis, the rotations about both axes being dependent upon the direction and intensity of a blow struck on said ball and means including a film projector operatively connected to the mounting such that an image may be projected by said projector to indicate the direction and intensity of said blow in response to rotation of said ball about said axes.

2. A golf game according to claim 1, wherein the film projector is mounted for pivotal movement about the vertical axis of rotation of the mounting and includes a film feed operable by the angular rotation of said ball about the substantially horizontal axis.

3. A golf game according to claim 2, wherein an elongated swivel arm mounted for pivotal movement about the vertical axis of rotation of the mounting interconnects the film projector and the mounting.

4. A golf game according to claim 3, wherein a servo rod is provided also between the film projector and the mounting to control the movement of the film projector such that the axis of the focussing lens of the projector is in all cases parallel to one straight line.

5. A golf game according to claim 4, wherein the mounting comprises a U-shaped bracket rotatable about a substantially vertical axis, a rotatable axle bridging the arms of the U-shaped bracket, and a spindle on the axle, carrying the ball.

6. A golf game according to claim 5, wherein the rotation of the axle bridging the arms of the U-shaped bracket is transmitted to the film feed by means of a flexible drive which does not interfere with the pivoting movement of the film projector.

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ANTON O. OECHSLE, *Primary Examiner.*

RICHARD C. PINKHAM, *Examiner.*

G. J. MARLO, L. J. BOVASSO, *Assistant Examiners.*