

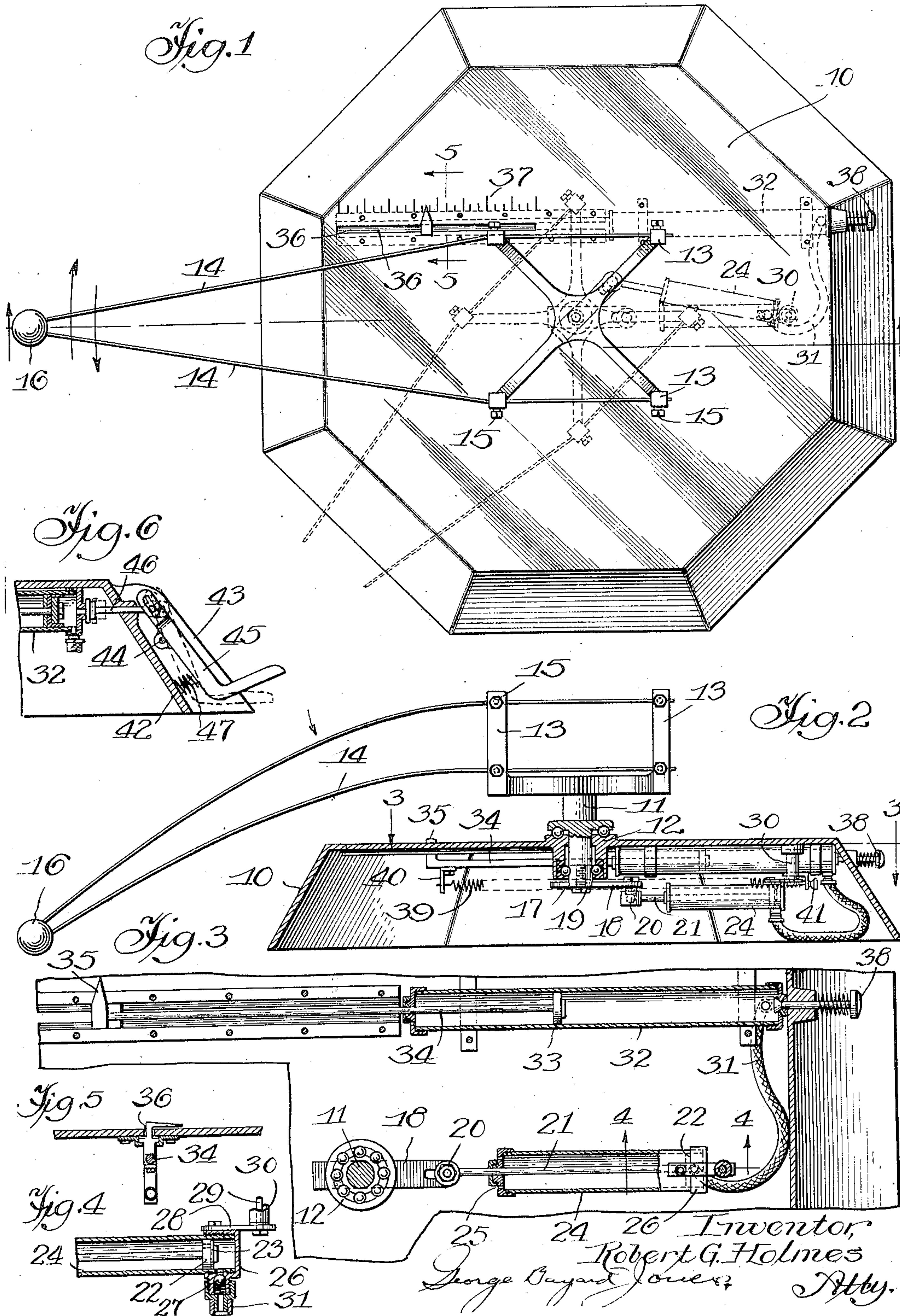
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GOLF PRACTICE DEVICE

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GOLF PRACTICE DEVICE

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4 Claims. (Cl. 265—20)

My invention relates to improvements in golf practice devices such as indicate in a general way the force of the blow by the head of the club against the golf ball. The device also affords amusement and exercise.

One object of the invention is to provide an improved device in which the ball is supported by a radial arm projecting from a vertical, rotatable shaft whereby when the ball is struck, the shaft will rotate and cause air to be pumped into a cylinder to indicate the force of the blow through the air pressure in said cylinder.

Another object is to provide a device of this character in which the air cushions the blow so that there is little or no shock to the registering mechanism and associated parts.

A further object is to provide a device of this character in which the height of the ball above the floor or the ground may be conveniently regulated.

Other objects and advantages will be apparent from the following description of the preferred embodiment of the invention.

In the accompanying drawing—

Fig. 1 is a top plan view of one form in which the invention may be manufactured;

Fig. 2 is a central sectional elevation thereof;

Fig. 3 is an enlarged section on line 3—3 of Fig. 2;

Fig. 4 is an enlarged section on one end of the pump on the line 4—4 of Fig. 3;

Fig. 5 is a section on the line 5—5 of Fig. 1, and

Fig. 6 is an enlarged sectional elevation of a modified form of relief valve.

The device comprises a suitable base 10 such as one having an inverted saucer shape and made of metal having an octagonal or other outline. The base supports a vertical, rotatable shaft 11 in a suitable bearing 12 which may contain ball bearing raceways. The shaft 11 supports a frame having a number of upright arms 13 or extensions at the ends of the radial arms, of which four are shown in the drawing. A pair of wires or small rods 14 pass through aligned openings in each pair of arms 13—13, as shown in Fig. 1 and are held in place by set screws 15. The wires 14 are preferably curved to bring their outer ends near the floor or the ground and a golf ball 16 is affixed to the outer end. Although an ordinary golf ball may be used, through holes in which the wires may be inserted, any other suitable ball or impact member may be used, such for example as one made of hard rubber molded about the ends of said wires.

By means of the set screws 15 the ball may be adjusted any suitable height above the floor and

may be also adjusted toward or away from the shaft 11 to vary the effective radius.

The lower end of the shaft 11 may be slotted at 17 to receive a crank 18, held in place by a stud 19. The crank has a pin or preferably a universal joint 20 near the end thereof, connected to one end of the piston rod 21. A piston 22, of a suitable type, may be mounted on the end of the piston rod and is provided with a flexible flap 23 covering an aperture in the piston whereby said piston when moved outwardly, will permit air to flow past the piston but when moved in the opposite direction will compress the air and force it through the exit. The piston slides in the cylinder 24, one end of which may have a spider or a guide 25 with openings therein, the other end of the cylinder being closed by a cap 26. A check valve or ball valve 27 is connected to the end 26 whereby air may be pumped out through said valve but cannot return. See Fig. 4.

The cylinder and piston constitute a pump, said cylinder being mounted to oscillate by means of a bracket 28 secured to the cylinder end 26. A bolt 29 passes through an opening in said bracket and also through a sleeve 30, being screwed into the horizontal top plate comprising part of the base. The swivel joint thus formed allows the air pump cylinder to oscillate under the influence of the crank 18.

It will be apparent that when the golf ball is struck it will rotate the shaft 11 a number of times about the axis, there being practically no resistance to the impact when the ball is struck, except the inertia of the parts, but as soon as the crank 18 begins to turn, it compresses the air in the cylinder 24 and as the piston moves back and forth a number of times it pumps air from said cylinder through the hose 31 into the reservoir 32, building up the pressure therein and forcing the piston 33 and the piston rod 34 outwardly. The piston rod has an indicator 35 connected thereto and projecting upwardly through a slot 36 in the base with a scale 37 adjacent the indicator, to give a comparative reading of the pressures developed by the impact of different blows on the golf ball. While the indicator does not accurately register the distance that the ball would have travelled had it been free, nevertheless it gives a comparative indication of the force of the blows and the alignment of the club head with respect to the ball.

In order to release the air compressed in the reservoir, a relief valve 38 is provided which, when

pressed inwardly, by the hand or foot, permits the air to escape. A spring 39 is secured to a bracket 40 on the rod 34 at one end and is adjustably attached to a fixed support at the other end by a nut 41, whereby said spring is extended when the piston 22 is forced outwardly as the air is pumped into the reservoir, but retracts and moves said rod and the piston 22 in the opposite direction when said air is released.

10 The spring may be adjusted to regulate the movement of the indicator in accordance with the graduations of the scale, i. e. so that the maximum reading may be in pounds, in yards, or some other unit of measurement.

15 In Fig. 6, 42 is part of the base, affixed to which, or made integrally with which, are projections or flanges 43 supporting a pin 44 which acts as a fulcrum for lever 45, one end of which is bent so that it can easily be moved with the foot, and the other end of which is connected to valve and valve stem 46 located at the end of reservoir 32. A spring 47 held between lever 45 and base 42 holds valve 46 shut through the medium of lever 45. When pressure is exerted by the foot on lever 45 against the force of the spring 47 it opens valve 46 releasing the air compressed in the reservoir. This means may be used instead of relief valve 38 shown in Fig. 3.

It will be noted that the cylinders form a pneumatic cushion or a dash pot to cushion the force of the blow struck against the golf ball and therefore there is no sudden jar or shock applied to the registering parts of the mechanism and the pressure builds up gradually where two cylinders are employed. Also, the rotating parts will turn either in clockwise or counterclockwise direction, as viewed in Fig. 1. In other words, the ball may be struck by a right hand or left hand golf player and operate equally well.

40 I claim:

1. A golf practice device comprising a hollow base having a horizontal plate with a slot therein and side walls, a vertical shaft rotatably mounted in an opening in said plate, a radial arm extending outwardly from said shaft beyond said base and downwardly below the top of the same, a crank mounted on the lower end of said shaft,

a cylinder pivotally supported beneath said plate whereby it may oscillate, a piston therein connected to said crank, an air reservoir supported beneath said plate, a duct connecting said reservoir and said cylinder, a check valve in said duct, a piston in said reservoir movable in response to increase in the pressure of the air pumped therein by said first cylinder and piston, an indicator in said slot, connections between said indicator and said reservoir piston and a spring associated with said indicator and tending to restore it to initial position against the pressure of the air in said reservoir.

2. A device as in claim 1 with the addition of a relief valve for said reservoir to permit said spring to restore the indicator to zero position.

3. A golf practice device comprising a base, a rotatable member supported thereby, a radial arm on said member, a ball on said arm whereby the impact of a golf club on said ball will cause said member to make several revolutions, an air pump, mechanical connections from said member to said pump, a reservoir communicating with said pump, a gauge indicating the pressure therein, a relief valve for said reservoir, and a lever mechanically connected to said relief valve and supported rotatably by said base, one end of said lever projecting from said base.

4. A golf practice device comprising a hollow base having a horizontal plate, a vertical shaft rotatably mounted in an opening in said plate, a radial arm extending outwardly from said shaft beyond said base and downwardly below the top of the same, a crank mounted on the lower end of said shaft, a cylinder pivotally supported beneath said plate whereby it may oscillate, a piston therein connected to said crank, a second cylinder supported beneath said plate, a duct connecting said second cylinder to the first cylinder, a check valve in said duct, a piston in said second cylinder movable in response to increase in the pressure of the air pumped therein by said first cylinder and piston, an indicator on said base, and connections between said indicator and said second cylinder.

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