June 11, 1929. G. ATTANASIO 1,716,678

EXERCISING DEVICE

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Fig. 1.

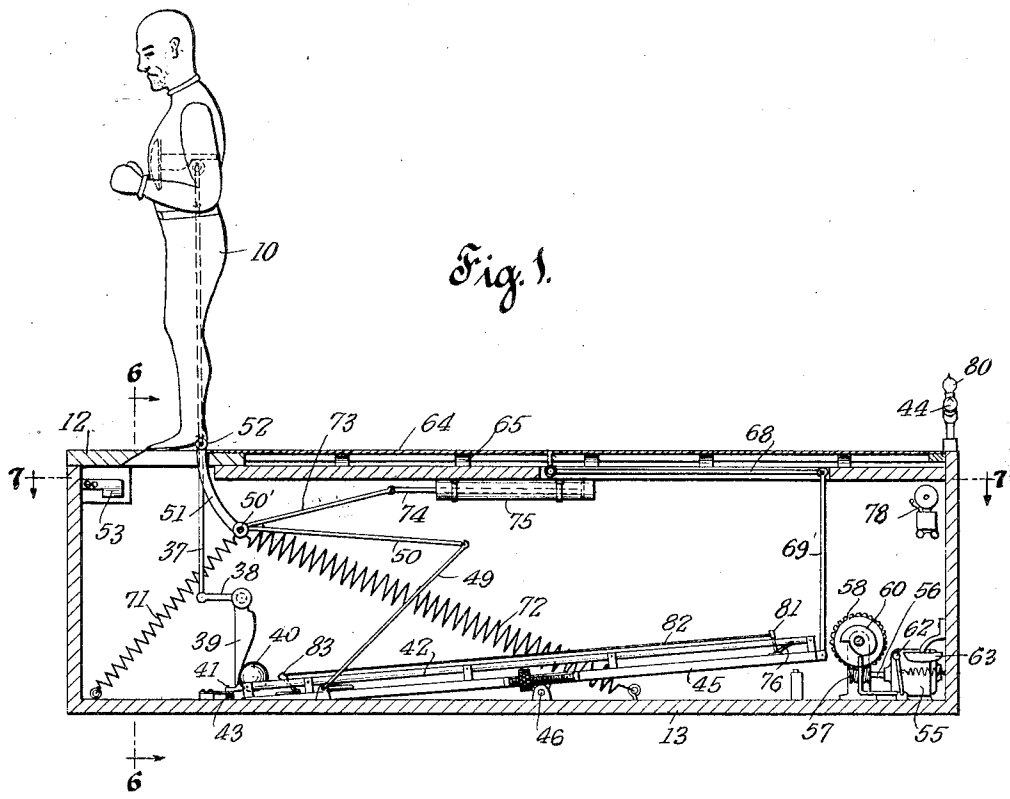
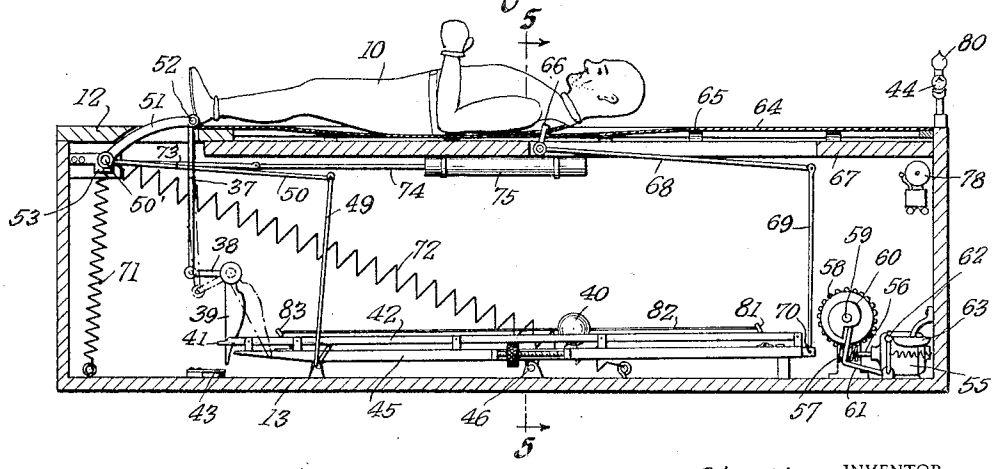


Fig. 2.



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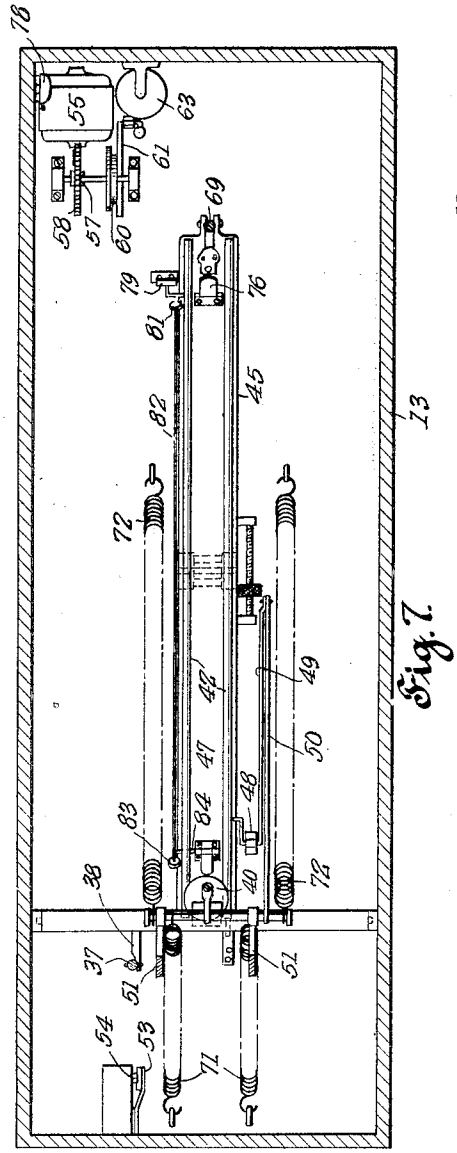


Fig. 7.

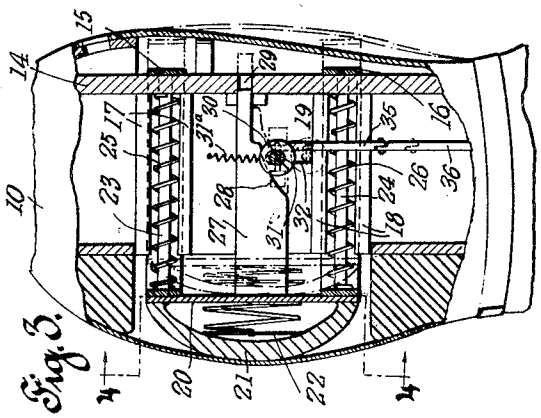


Fig. 3.

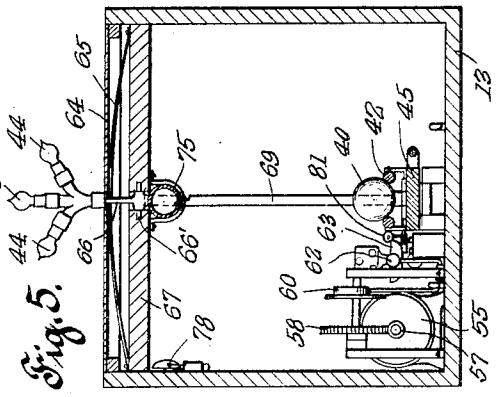


Fig. 5.

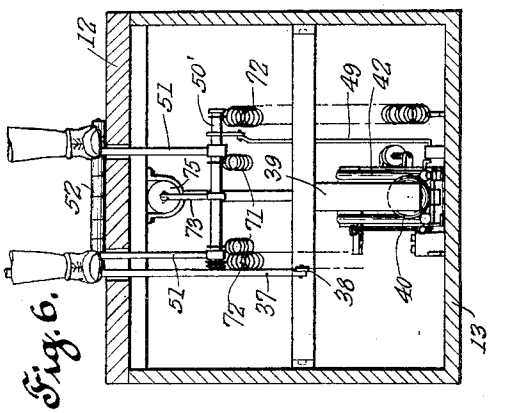


Fig. 6.

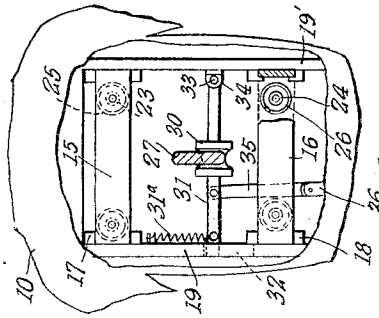


Fig. 4.

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Fig. 8.

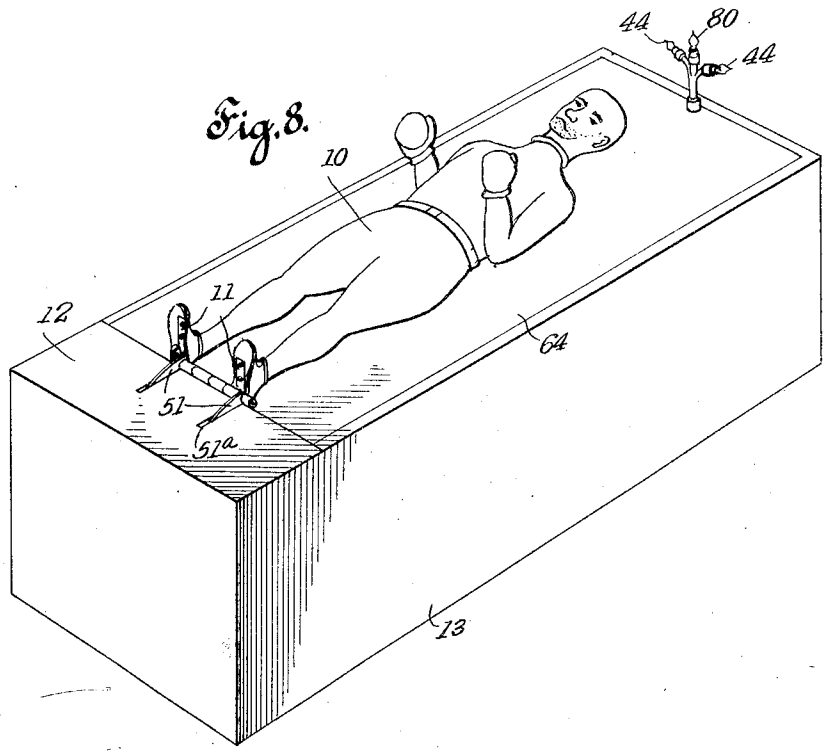
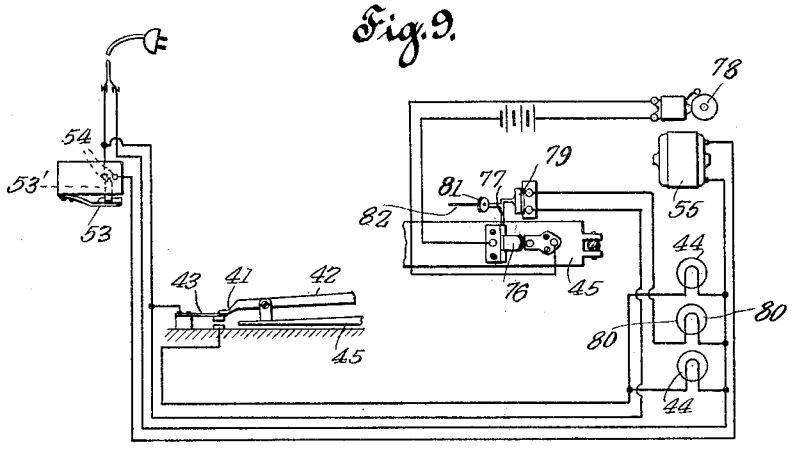


Fig. 9.



Giuseppe Attanasio INVENTOR

BY

ATTORNEY

Patented June 11, 1929. 1,716,678

UNITED STATES PATENT OFFICE.

GIUSEPPE ATTANASIO, OF BROOKLYN, NEW YORK.

EXERCISING DEVICE.

Application filed May 14, 1928. Serial No. 277,448.

This invention relates to amusement devices designed to receive the impact of blows and indicate when the force of a blow exceeds a predetermined amount.

The device comprises a dummy normally maintained in an upright position, but hinged so that it may fall to a prone position. When the dummy is in an upright position electrical connections to a mechanism associated with the dummy cause certain lamps to light, and when the dummy is in the prone position the lamps are extinguished. Should the force of a blow exceed a predetermined amount, another incandescent lamp, preferably red in color, will be caused to light and a bell will ring. The mechanism associated with the dummy controls the lighting of the lamps and causes the dummy to be quickly returned to an upright position after it has been momentarily held in a prone position.

It is an object of the invention to provide an amusement device which is entirely automatic in operation and requires no attendant.

It is a further object to provide a device which will give a relative indication of the force of a blow.

These and other objects are attained by the novel construction, combination and arrangement of parts hereinafter described and shown in the accompanying drawing, constituting a material part of this disclosure and in which:

Fig. 1, is a cross-sectional view of the device showing the dummy in an upright position.

Fig. 2, is a cross-sectional side view of the device with the dummy in a prone position.

Fig. 3, is a cross-sectional side view showing the internal structure of the body of the dummy.

Fig. 4, is a sectional view taken along line 4—4 of Fig. 3.

Fig. 5, is a sectional view taken along line 5—5 of Fig. 2.

Fig. 6, is a sectional view taken along line 6—6 of Fig. 1.

Fig. 7, is a longitudinal sectional view taken along line 7—7 of Fig. 1.

Fig. 8, is a perspective view of the exterior of the device showing the dummy in a prone position.

Fig. 9, is a diagram of the electrical connections as used in the device.

Referring to the drawings, a dummy 10 is shown having plates attached to the bottom of its feet, the plates 11 being integral with levers 51 passing through slots 51ª in the top 12 of the casing 13. The body of the dummy contains a shock absorbing device comprising a brace 14 which is positioned within an upper square shaped metal band 15 and a similar lower band 16, the bands being slidable in the channels formed by the flanges 17 and 18 integral with side plates 19 and 19′. The front sides of the bands are fixed to a metal plate 20 which supports a hollow cushion 21 having a spring 22 therein. Attached to the front sides of the bands are guide rods 23 and 24 which are encircled by compression springs 25, 26 abutting the brace 14, the latter being apertured so that the rods 23, 24 may slide freely therethrough.

Attached to the rear side of plate 20 and moving therewith is an arm 27 having its lower edge cut to form a cam 28, the rear end of the arm being guided in a slot 29 in the brace 14. The cam 28 engages a roller 30 rotatably mounted on a shaft 31, normally held in a raised position by a spring 31ª, one end of the shaft being adapted to move up and down in a slot 32 in wall 19, while the other end of the shaft is pivoted to a pin 33 supported by lugs 34 integral with side wall 19′ opposite and similar to wall 19. (See Fig. 4.)

The roller 30 engages a rod 35 to move the latter downward when arm 27 is moved rearwardly, rod 35 being connected by a pin to a rod 36, the latter being pivoted to a rod 37 positioned below the top 12 of the casing 13, the top 12 being cut out to permit the passage of the rods therethrough. Rod 37 is in turn pivotally connected to an arm 38 of a bell crank, the other arm 39 of the bell crank being widened so that it may better engage the ball 40.

When the dummy is in the upright position the arm 39 bears down on end 41 of a runway rail 42, the end 41 in turn depressing the switch 43 to close a circuit through the incandescent lamps 44, which are preferably white in color.

The runway rails 42 are mounted on a base 45 pivotally supported at 46, and the rails 42 are spaced apart a distance slightly less than the diameter of the ball 40 so that the ball will roll very slowly on the runway, although the ball may be rotating rapidly.

When the dummy is struck by a blow sufficient to force it to the prone position, the rod 37 is forced downward to rotate the bell crank counter-clockwise, during which movement the arm 39 strikes the ball 40 to cause it to roll up the runway, a short distance past the support 46, the distance of travel depending on the force of the blow. Although the runway is rotated about the support 46, it continues to be tilted towards the arm 39 so that the ball may roll down the runway again to its intial position.

Positioned near and adapted to engage the upper surface of base 45 is an arm 47 of a rock shaft 48, which is connected to link 49, the latter being pivoted to a link 50, which in turn is connected to shaft 50′ rotatably connected to the levers 51. When levers 51 are rotated clockwise until one of them engages the leaf spring 53, a plug 53′ is depressed into engagement with contacts 54 to complete an electrical circuit through the motor 55.

Fixed to the motor shaft 56 is a worm 57 in mesh with a worm gear 58 fixed to a shaft 59. Also fixed to shaft 59 is a cam 60 which intermittently engages an arm of a rockshaft 61 to cause arm 62 to strike the bell 63.

When the dummy falls to the prone position it depresses the flexible cover 64 of the casing and the shock of the falling dummy is absorbed by the bow springs 65. At the same time a latch 66 projecting through the cover 64 engages the back of the dummy to hold it in the prone position.

The latch 66 is integral with a shaft 66′ rotatably mounted in the cross-brace 67, the shaft 66′ also having rigidly connected thereto a link 68 which is pivoted to a vertical link 69, the latter being pivoted at 70 to the runway base 45. When the pivot 70 moves upwardly, link 68 rotates the latch 66 to disengage it from the dummy.

In operation, when the dummy falls to the prone position as the result of a blow delivered thereto, ball 40 rolls slowly up the runway and stops a short distance beyond the support 46, and then commences to roll back to its initial position, tilting the runway downward as it rolls, which causes pivot 70 to move upward to release latch 66. The dummy is returned to an upright position by the pull of springs 71 and 72 connected with levers 51, the latter being connected by links 73 and 74 to a dashpot 75.

When an unusually powerful blow is delivered to the dummy, the ball 40 continues rolling until it strikes the arm 76 which is fixed to a rockshaft 77. And depression of arm 76 closes a switch to complete a circuit through the electric bell 78, and the latter continues to ring until the ball is returned to its initial position. At the same time another switch 79 is closed to cause the lamp 80, preferably red in color, to light.

Integral with rockshaft 77 is an arm 81 connected to a link 82, which is in turn connected to an arm 83 integral with a rockshaft 84 positioned near the crank arm 39. Also rigidly connected with shaft 84 is an arm 85 projecting in the path of the ball 40, and when the ball rolls down the runway, arm 85 is depressed to rotate rockshaft 77 to open the switches in circuit with the bell 78 and the lamp 80.

When the dummy is struck by a blow insufficient to force it to a prone position, it is rapidly returned to the upright position by the pull of the springs on levers 51, at the same time arm 47 bears down on base 45 to tilt the latter so that the ball will rapidly return to its initial position.

The base 45 may be adjusted by means of the screw and nut arrangement to regulate its tilting movements.

The foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which obviously an embodiment may be constructed including many modifications without departing from the general scope herein indicated and denoted in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. An amusement device comprising an object adapted to receive the impact of a manually delivered blow, shock absorbing means contained in the object, a rod positioned adjacent said means, a camming device connected with said means to move the rod axially when the object receives a blow, a bell crank connected with the rod, an inclined runway, a ball adapted to be forced up the runway by an arm of the bell crank, a latch for holding the object in one position, and means connected with the runway to release the latch when the ball rolls down the runway.

2. An amusement device comprising a dummy adapted to be moved to a prone position, means for normally maintaining the dummy in an upright position, a rod projecting into the dummy, a camming device in the body of the dummy and adapted to move the rod axially when the blow is delivered to the dummy, a runway having a ball positioned thereon, means connected with the rod to roll the ball up the runway, a latch for momentarily holding the dummy in a prone position, and means connected with the runway to release the latch when the ball rolls down the runway.

3. In an amusement device, a runway having a ball positioned thereon for rolling

movement, the tracks of the runway being spaced apart a distance slightly less than the diameter of the ball, a latch, and means connected to the runway to move the latch.

4. In an amusement device, a dummy having a camming device mounted therein, a rod projecting into the dummy and engaging the camming device, a bell crank having one arm connected to the rod, a runway having a ball mounted thereon for rolling movement, the other arm of the bell being adapted to force the ball along the runway when the rod is moved axially by the camming device.

Signed at New York, in the county of Kings and State of New York, this 7th day of May, 1928.

GIUSEPPE ATTANASIO.