

Feb. 15, 1944.

O. SCHWEITZER

2,342,016

COUNTER FOR RIFLE TARGETS

Filed Aug. 26, 1942

2 Sheets-Sheet 1

Fig. 1.

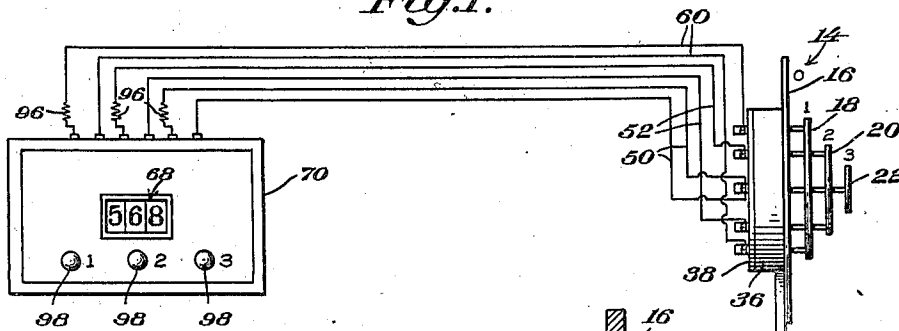


Fig. 2.

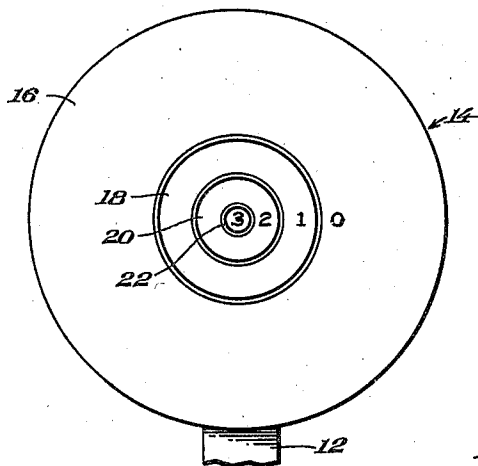


Fig. 3.

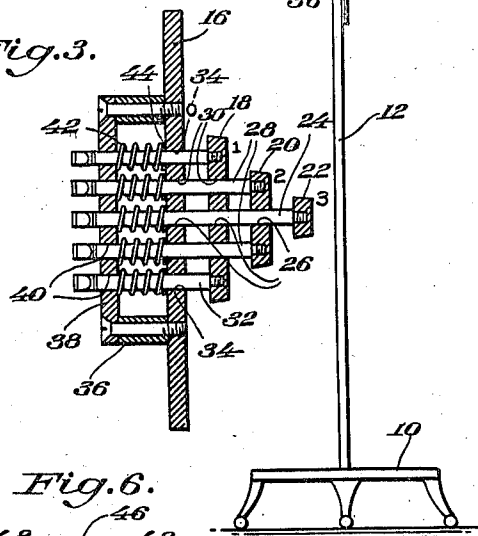


Fig. 6.

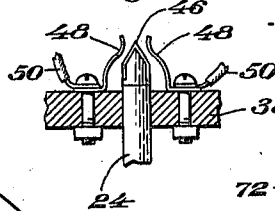


Fig. 5.

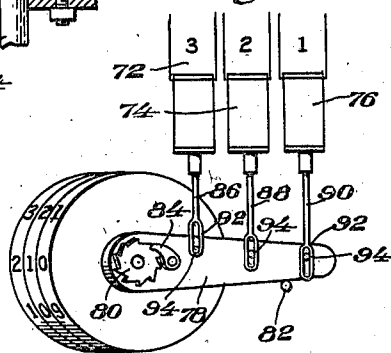
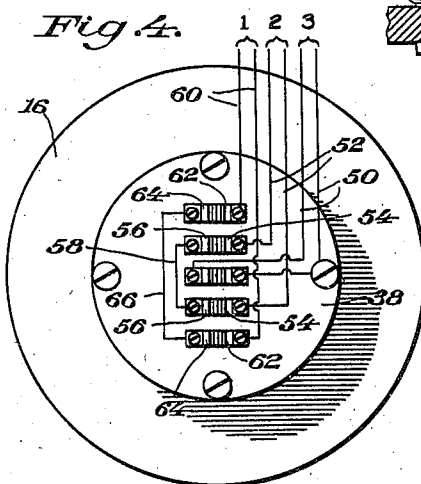


Fig. 4.



Oscar Schweitzer INVENTOR

BY Victor J. Evans & Co.

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2 Sheets-Sheet 2

Fig. 7.

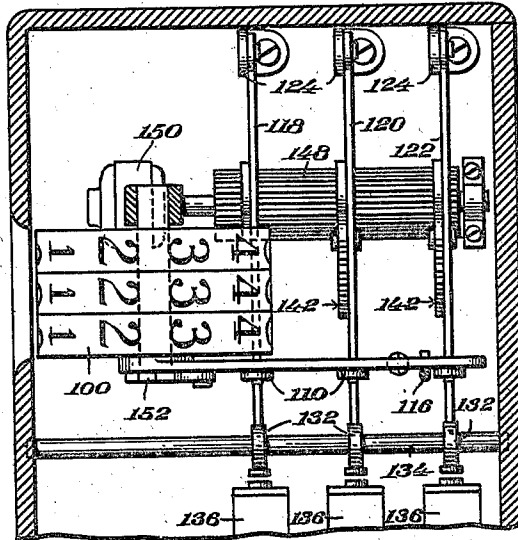


Fig. 6.

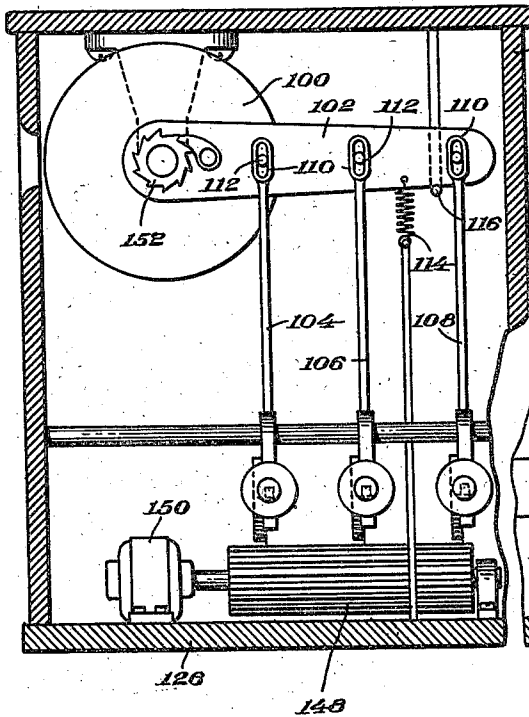
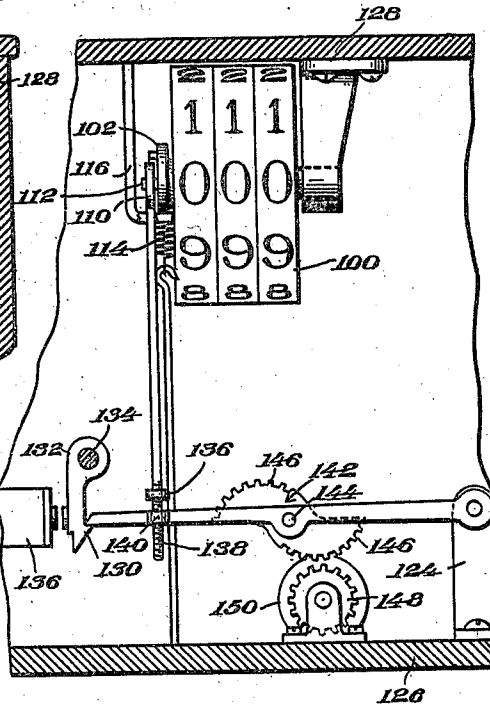


Fig. 9.



Oscar Schweitzer INVENTOR

By Victor J. Evans & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE

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COUNTER FOR RIFLE TARGETS

Oscar Schweitzer, Miami Beach, Fla.

Application August 26, 1942, Serial No. 456,245

4 Claims. (Cl. 235—92)

My invention relates to recording devices, and has among its objects and advantages the provision of an improved rifle target designed to register hits on the target and to totalize the number of points made with a predetermined number of shots.

In the accompanying drawings:

Figure 1 is a diagrammatic view of a target in accordance with my invention.

Figure 2 is a face view of the target.

Figure 3 is a sectional view.

Figure 4 is a rear face view of the target partly in section.

Figure 5 is a perspective view of a solenoid mechanism for actuating the counter mechanism.

Figure 6 is a sectional view of a target switch.

In the embodiment of the invention selected for illustration, Figure 1 illustrates a base 10 provided with an upright standard 12 having a target 14 supported on its upper end. This target comprises a bullet proof panel 16 of relatively large diameter and fixedly secured to the standard 12. Target members 18, 20 and 22 of progressively smaller diameters are arranged concentrically of the panel 16 and with respect to one another.

The target member 22 is provided with a shaft 24 slidably mounted in openings 26 in the target members 18 and 20 and the panel 16. Two shafts 28 are attached to the target member 20 and are slidably guided in openings 30 in the target member 18 and the panel 16. Two shafts 32 are also attached to the target member 18 and are slidably mounted in openings 34 in the panel 16.

A housing 36 is attached to the rear face of the panel 16, which housing includes a detachable wall 38 provided with openings 40 through which the shafts 24, 28 and 32 are slidably extended. Figure 3 illustrates the normal positions of the target members 18, 20 and 22 which positions are yieldingly maintained by reason of compression springs 42 mounted on the respective shafts 24, 28 and 32, with the springs abutting flanges 44 attached to the shafts and the wall 38.

All the shafts have tapered ends provided with tapered contacts 46. In Figure 6, the contact 46 on the shaft 24 is engageable with spring contacts 48 when the shaft is shifted against the tension of its spring 42, as when the target member 22 is hit. Wires 50 are connected with the contacts 48.

In Figure 4, two wires 52 are respectively connected with spring contacts 54. Two companion contacts 56 are electrically connected by a lead 58. The two sets of contacts 54 and 56 are arranged for coaction with the tapered contacts 46 on the shafts 28.

Two wires 60 are electrically connected with spring contacts 62, and the companion contacts 64 are electrically connected by a lead 66. The two sets of contacts 62 and 64 coact with the tapered contacts 46 on the shafts 32. All the shafts are preferably of insulative material, while all the contacts 48, 54, 56, 62 and 64 are identical and mounted on the wall 38.

A counter or odometer 68 is mounted inside a housing 70 which may be located remotely from the target so that the reading thereon may be readily visible by those engaged in target practice. Inside the housing 70 is mounted solenoids 72, 74 and 76 respectively electrically connected with the wires 50, 52 and 60. Normally the solenoids are deenergized and are energized only when the respective target members 22, 20 and 18 are hit. The counter 68 may be of conventional construction and need not be described in detail. Means for actuating the counter comprises a lever 78 mounted for closewise rotation independently of a ratchet wheel 80. Normally the lever 78 rests on a stop 82. Counterclockwise rotation of the lever 78 is consummated through energization of one of the solenoids, which rotation imparts rotary motion to the ratchet wheel 80 through the medium of a pawl 84 pivotally mounted on the lever. Armatures 86, 88 and 90 are associated with the respective solenoids 72, 74 and 76. Each armature includes an elongated loop 92 loosely receiving a pin 94 attached to the lever 78. Figure 5 illustrates the normal positions of the loops 92, with the pins 94 spaced progressively increasing distances from the axis of the lever 78. Thus upward movement of the armature 86, which is located closest to the axis of the lever 78 imparts the greatest rotary motion to the ratchet wheel 80, which rotary motion progressively decreases with respect to the action of the armatures 88 and 90. The lever 78 falls to the position of Figure 5 through its own weight.

One wire of each group 50, 52 and 60 is connected with a source of current 96. Each group of wires may be electrically connected with lamps 98 to indicate the target hit by a particular shot.

Figures 7, 8 and 9 illustrate a modified form of counter action, wherein the counter 100 is provided with a lever 102 identical with the lever 78. Three links 104, 106 and 108 are operatively connected with the lever 102 through the medium of elongated loops 110 loosely confining pins 112 attached to the lever 102. A tension spring 114 yieldingly holds the lever 102 in its normal position of rest on a stop 116.

Links 104, 106 and 108 are connected with levers

118, 120 and 122, respectively. These levers are pivotally connected with brackets 124 mounted on the floor 126 of a housing 128 corresponding to the housing 70. All the levers 118, 120 and 122 normally lie on shoulders 130 on latches 132 pivotally mounted on a shaft 134. The latches 132 are in the nature of armatures respectively actuated by solenoids 136 corresponding to the solenoids 72, 74 and 76. Each of the links 104, 106 and 108 is provided with a stop 136 engageable with its respective lever when pivoted upwardly. All the links have threaded shanks 138 extending loosely through eyes 140 in the respective levers, so that the levers may drop downwardly when released by the latches 132.

To the levers 118, 120 and 122 are pivotally connected segmental gears 142, as at 144, each gear having two gear sections 146. A relatively wide gear 148 is driven by a motor 150. When one of the armatures 136 is energized, the latch 132 associated therewith is attracted toward the armature for releasing the lever supported thereby, as the lever falls downwardly one of the gear sections 146 is brought into meshing engagement with the gear 148 and rotated in a clockwise direction. Rotation of this gear section imparts a lifting motion to the carrying lever for elevating its respective link and actuating the lever 102 to impart counting rotation to the ratchet wheel 152 associated with the counter 100. The links 104, 106 and 108 are arranged at progressively increased distances from the axis of the lever 102 to rotate the ratchet wheel 152 in variable amounts.

In both forms of the device, the smallest target member is operatively connected with the relay which advances the counter mechanism in the greatest amount, so that the total count registered by the counter will depend upon the skill of the shooter in hitting the target members registering the largest values.

Without further elaboration, the foregoing will so fully explain my invention, that others may, by applying current knowledge, readily adapt the

same for use under various conditions of service. I claim:

1. In a counter, an actuating lever for the counter, means embodying a plurality of independently operable units connected to the lever and adapted respectively when operated to rock the lever through different angles, means for operating said units, means releasably maintaining said units out of operative relation to their operating means, and electrical means associated with said last means and adapted when the electrical means is energized to effect the release of one of said units for operation.

2. A counter as set forth in claim 1, wherein the said units each comprises a pivoted lever, a link connected to said lever and to the counter actuating lever, and a member carried by said first lever adapted on the releasing of said lever to establish an operative relation between said lever and the unit operating means.

3. A counter as set forth in claim 1, wherein said units each comprises a pivoted lever, a link connected to said lever and to the counter actuating lever, and a member carried by said first lever adapted on the releasing of the unit to establish an operative relation between said lever and the unit operating means, and wherein the means for releasably supporting the unit out of operative relation to its operating means comprises a latch normally engaging said first lever and associated with the electrical means for retraction thereby when the electrical means is energized.

4. A counter as set forth in claim 1, wherein the unit operating means comprises a gear and a motor for driving the same, and wherein the said units each comprises a pivoted lever, a link connected to said lever and to the counter actuating lever, and segmental gears pivoted to said first lever adapted on the releasing of the unit to establish an operative relation between said lever and gear.

OSCAR SCHWEITZER.