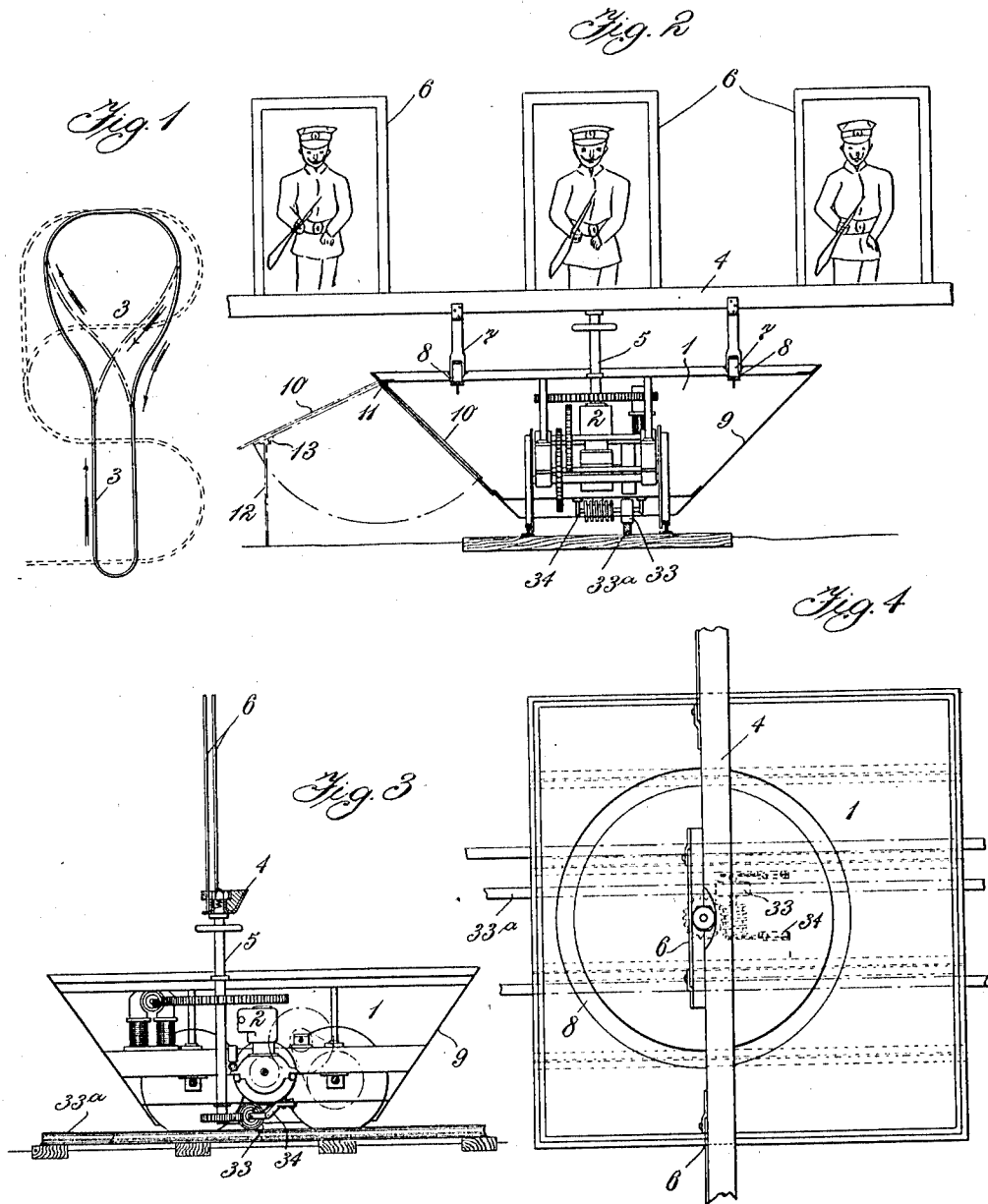


A. N. WHITNEY.
RIFLE RANGE, TARGET, AND THE LIKE.
APPLICATION FILED DEC. 10, 1910.

1,061,577.

Patented May 13, 1913.

2 SHEETS-SHEET 1.



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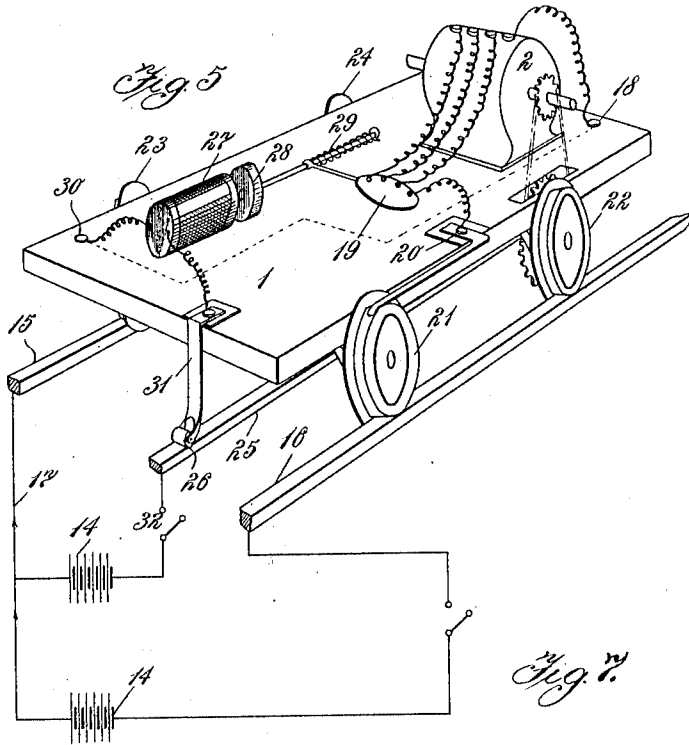


Fig. 5

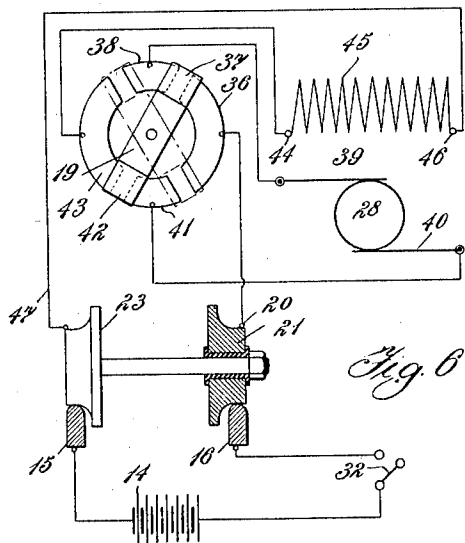
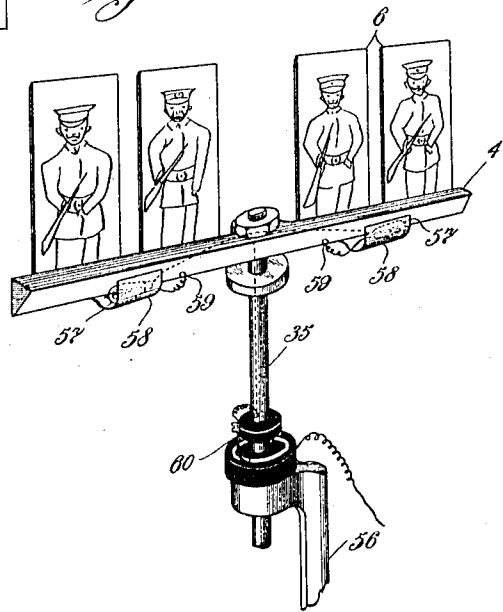


Fig. 6



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RIFLE-RANGE, TARGET, AND THE LIKE.

1,061,577.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed December 10, 1910. Serial No. 596,701.

To all whom it may concern:

Be it known that I, ASA NORMAN WHITNEY, a subject of the King of Great Britain, residing at the Melbourne Club, Melbourne, in the State of Victoria, Commonwealth of Australia, have invented certain new and useful Improvements in and Relating to Rifle-Ranges, Targets, and the Like, of which the following is a specification.

This invention has reference to rifle ranges, targets and the like, and relates more especially to certain new and useful improvements in my previous United States Patent No. 953501.

The most important and essential features of the present invention consist in the combination with a carriage carrying the targets, of means either mechanical or electrical or both, whereby said carriage is controlled so that it may be moved along the track backward and forward or stationed at any point at will, and in the provision of electrically or mechanically operated means whereby the pivotally arranged beam upon which the targets are mounted is automatically moved and kept in any required position.

In order to illuminate the targets at night time, I moreover provide for an arrangement of electric lamps which may be intermittently or continuously lighted either from a self contained source of power or from the operating circuit. These lamps may naturally be attached in any convenient position on the target carriage but preference is given to the method whereby the lamps are fitted near the foot and in front of the targets.

In order that my invention may be more clearly understood reference is made to accompanying drawings, showing a number of methods of construction.

Similar parts are designated by like references throughout the specification.

Figure 1 is a general view of a range fitted with targets constructed in accordance with my invention, showing as an example some ways of arranging the track or guides for the target; Fig. 2 is a part sectional elevation of a target and its carriage; Fig. 3 shows a part sectional side elevation of Fig. 2. Fig. 4 shows a plan of same. Fig. 5 shows a perspective view of a carriage and rails with a device for operating the forward and backward movement of the car-

riage, the targets being omitted; Fig. 6 shows a diagrammatic view of electrical connections; Fig. 7 shows a perspective view of the lighting device.

According to Figs. 1 to 4 this invention comprises a carriage or trolley 1 driven by an electro-motor 2 or other convenient means, upon tracks or guides 3 which may be arranged in any desired manner. The car 1 carries, pivotally mounted upon it, a beam or cross bar 4 pivoted at 5 and capable of angular motion thereabout in a horizontal plane. The said beam carries the targets 6, and is supported at convenient positions by means of rollers, wheels, or the like 7, capable of moving upon a circular track 8, also carried by the car, so that the beam is supported when moving about its pivot at other points and the weight is partially removed therefrom. The driving mechanism and other "vital" parts of the car are protected by means of a suitable casing of armor 9 which is provided with means of access to the parts within the same. For this purpose, the said casing or armor has a movable member 10 pivotally mounted as at 11, and provided with a gravitating leg or support 12 pivotally secured to the outer and normally lower end of the member 10 as seen at 13. The targets 6 may be of ordinary canvas on wooden frames or any other kind or description of target, and when the hits are recorded, may be patched in the usual manner. The track or guide may be arranged so that the targets recede from the firing point passing across the line of fire and continue down the range to disappear behind some cover, to reappear, again crossing the line of fire and approaching the firing point to disappear again and so return to the starting place. Another very convenient track or guide is the sinuous one having at each end a loop.

In connection with the aforedescribed trolley I now provide various methods and devices whereby the carriage or trolley is controlled in such a manner that it may be moved backward or forward at will. Another feature in said devices is the provision of means whereby the position of the pivotally arranged beam or target is automatically changed and kept in any required position. The first mentioned means consist in the combination with the electro-motor 2 suitably arranged on the platform of the carriage 1, the power for which motor is de-

rived from a dynamo or battery 14 or any other source of electric energy. Of the rails 15 and 16 on which the carriage travels, the former is connected to the supply current 5 17 which passes through the carriage and thence to the earth side of the field winding 18 (see dotted line) and through the motor 2 to the reverse switch 19, thence to an insulated contact 20 which in turn connects the 10 insulated wheels 21 and 22 to the return rail 16. The two opposite wheels 23 and 24 are in metallic connection with carriage and rail 15. A wire or bar or the like 25 arranged between or outside the rails serves as a conductor for an electric contact roller 26 which 15 is attached to and insulated from the carriage and connects with an electro-magnet 27, also arranged on the carriage. The reverse switch 19 (Fig. 6) is suitably mounted 20 on the platform of the carriage and is adapted to be operated by the electro-magnet 27 and an armature 28 and also by a spring 29 the magnet circuit being made through rail 15 and the carriage 1, thence through earth 25 connection 30 of electro-magnet 27, thence to an insulated springy bracket 31 attached to 1 and carrying the contact roller 26, the latter being adapted to travel over wire or rail 25. When this circuit from 15 and 25 30 is closed by a switch 32 at the firing point, the switch must remain in during the return of the carriage.

The means whereby the pivotally arranged beam or the target 6 is automatically 35 changed and kept in any desired position consists of a skid roller 33 and a bracket 34, skid roller and shaft carrying the latter being suitably supported. The said shaft is actuated by the friction skid roller running 40 in frictional contact with a skid rail 33^a placed where desired, and operates the vertical shaft 5 by means of star motions or worm wheel and cogs. Supports or bearings (not shown) for this vertical shaft, which projects 45 through the framework of the trolley carrying the target, may be provided in any convenient manner. The top end of this shaft is adapted to receive the target 6 while a quick adjustment of the beam 4 or target 50 6 is effected by suitable mechanical means. Thus when the roller comes in contact with a correspondingly arranged skid rail or the like the shaft is revolved so that the beam or target is changed to any desired position. 55 Diagram Fig. 6, relating to the electrical connections shows in the forward motion the

of supply 14 through switch 32 to rail 16 and insulated contact 20 and reverse switch 19 to terminal plate 36, thence through contact plate 37. On moving the reverse switch 60 19 to terminal plate 38 the current is directed by the motor brush 39 through armature 28 to motor brush 40, terminal plate 41 and through contact plate 42 to terminal plate 43 thence 65 by motor field connections 44 through motor field 45 to earth of trolley at 46, 47, wheel 23 and rail 15 back to battery or supply 14. To reverse the direction of the carriage the reverse switch arm 19 is brought 70 into position of dotted lines, Fig. 6, and thus will reverse the direction of current through armature of motor alone and this causes the said armature to rotate in the opposite direction. 75

The device for the illumination of the targets, Fig. 7, consists preferably in a bracket 56 suitably attached to the target carriage and serving at the same time as a guide for the vertical shaft carrying the beam and targets. The lamps 57 are secured to the beam 80 in any practical manner and protected by means of shields or trays 58. One side of each lamp is earthed at 59, the other side being connected to insulated spring contact 60 85 through the hollow vertical shaft 35, see dotted line, Fig. 7.

Having now fully described my said invention what I claim and desire to secure by Letters Patent is:— 90

The herein described device for moving the target-carriage forward and backward on the track, comprising in combination, an electro-motor on the carriage, a battery or other source of electric energy, means to connect the battery with the track, an intermediate rail between the track, a reverse switch 95 on the carriage, a contact roller suspended from the carriage and adapted to contact with the said intermediate rail, an electro-magnet and armature interposed between the contact roller and one of the rails of the track, and a spring operatively connected with the armature and the switch, substantially as and for the purpose specified and 105 shown.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ASA NORMAN WHITNEY.

Witnesses:

HERBERT D. JAMESON,
RIPLEY WILSON.