

March 29, 1932.

J. REMONTE

1,851,647

TARGET ACTUATING AND RESETTING MECHANISM

Filed Feb. 17, 1930

2 Sheets-Sheet 1

Fig. 3.

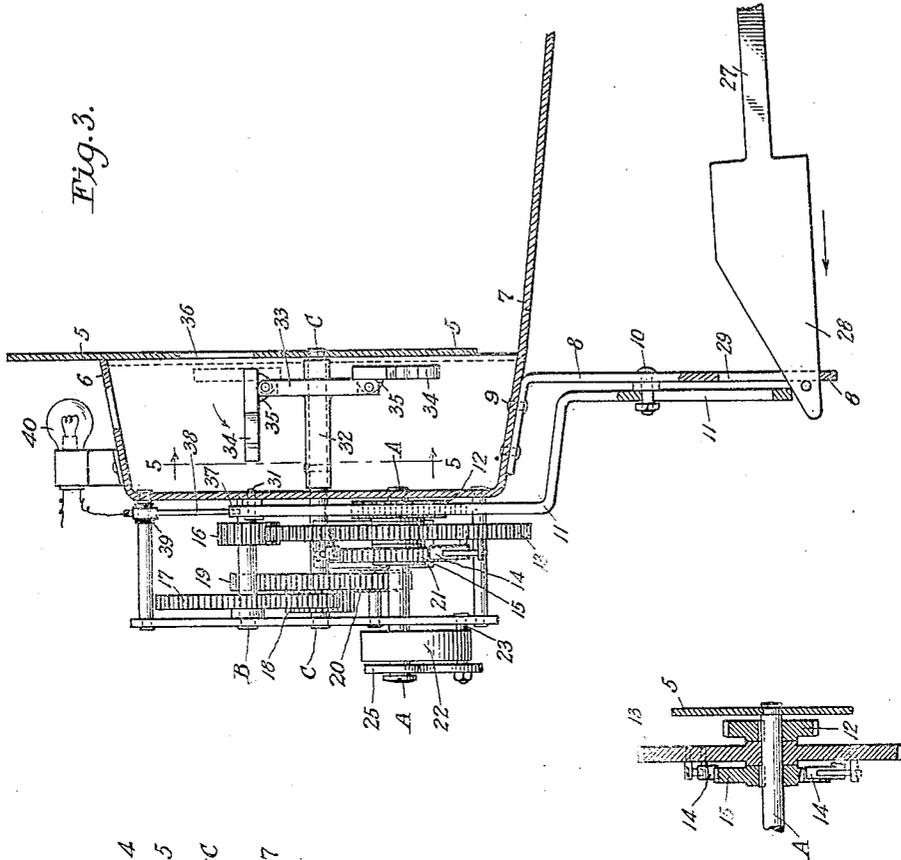


Fig. 4.

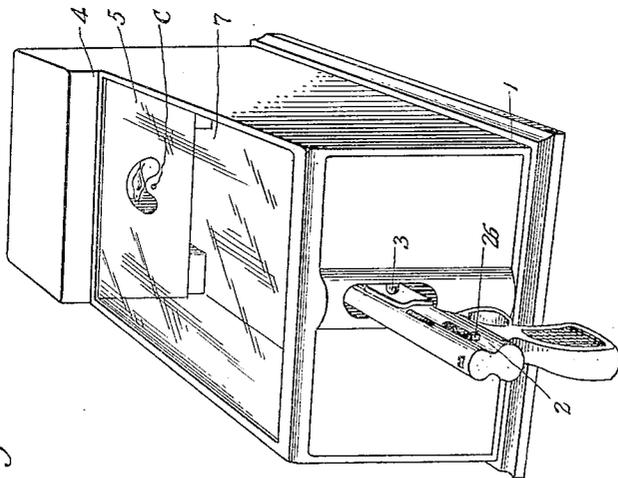


Fig. 1.

Inventor

JOHN REMONTE

George C. Cook.

Attorney.

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J. REMONTE

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2 Sheets-Sheet 2

Fig. 2.

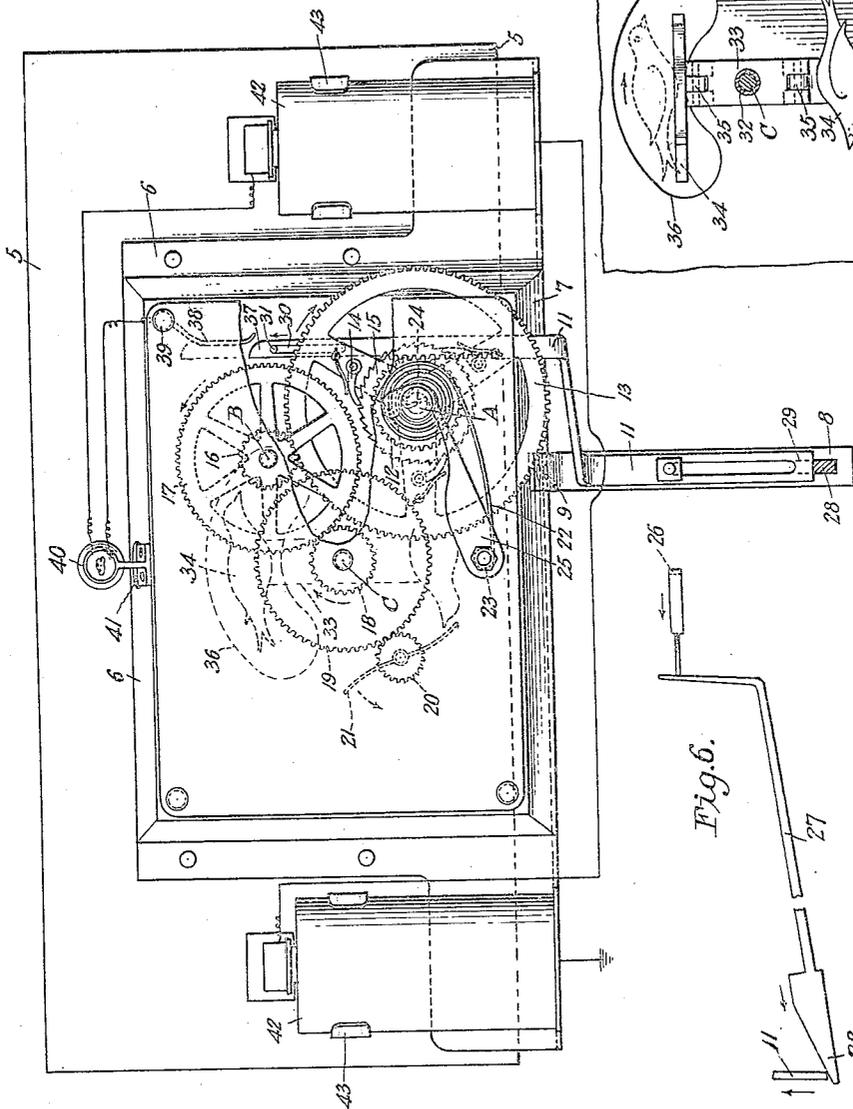


Fig. 5.

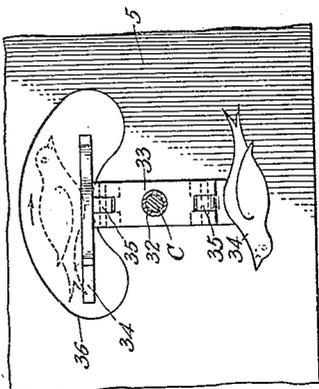


Fig. 6.



Inventor

JOHN REMONTE

George C. Cook

Attorney.

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UNITED STATES PATENT OFFICE

JOHN REMONTE, OF CORPUS CHRISTI, TEXAS

TARGET ACTUATING AND RESETTING MECHANISM

Application filed February 17, 1930. Serial No. 429,151.

My invention relates to new and useful improvements in target practice machines, and more particularly to the mechanism for operating, that is, revolving and resetting the targets.

Still another object of the invention is to provide a mechanism that may be easily attached to the several forms of target practice machines now in use, so that the mechanism will be all self-contained, easily set and automatically operated after being set.

With a number of target practice machines now in service, the different mechanisms are electrically operated, and in case of a short circuit the operator is apt to receive a serious shock. Again, where the machines are electrically operated, it is necessary to connect them to the lighting current and they cannot, therefore, be moved readily from one place to another.

It is well known to those familiar with this subject that these target practice machines comprise a box or casing, from which extends the butt of a pistol and which pistol has a limited traversing movement, the object being to sight the pistol and fire at a moving or stationary object at the rear of the cabinet.

Another object of the present invention, therefore, is to provide a spring motor mechanism to be fitted in the rear of these target practice machines, which will be wound by the movement of a lever which is operated when the coin is inserted in the pistol and after the lever movement has been completed, an object, or plurality of objects, mounted about a shaft will intermittently appear before an aperture, so that the player of the game or the one practicing will try to hit the object before it disappears from before the aperture.

Still another object of the invention is to provide a spring motor device wherein the objects to be hit, such as representations of birds, will automatically reset themselves after being knocked down, so that all that is necessary for the one testing his skill is to simply put in a coin, operate a lever, which cocks the pistol and starts the machine, and

then aim and fire the gun at the appearing objects.

Still another object of the invention is to so connect a light to the mechanism that as soon as the objects start to appear in front of the aperture they will be illuminated while, on the other hand, the light will not burn unless the birds are revolving.

Still another object of the invention is to fasten all of the parts to a front plate, so that this may readily be fitted to the rear of the target practice machines now in use and thus call for but little change in the present structures.

Still another object of the invention is to provide a returning fan, so that the bullets after being fired will gravitate toward the forward end of the machine and may then be again replaced in the pistol.

With these and other objects in view, the invention consists in certain new and novel arrangements and combination of parts, as will be hereinafter more fully described and pointed out in the claims.

Referring now to the drawings showing a preferred embodiment of my invention.

Fig. 1 is a perspective of a target practice machine with my improved attachment mounted in the rear thereof;

Fig. 2 is a rear view of the plate and spring motor device showing the gear train and the manner in which the same is set in motion and the manner of mounting the two little batteries for the illuminating light;

Fig. 3 is a side view, parts being shown in section;

Fig. 4 is a fragmentary sectional view showing more in detail the manner in which the several pinions and gears are mounted on the shaft;

Fig. 5 is a fragmentary sectional view taken on the line 5—5 of Fig. 3, showing the manner of mounting the birds on the central shaft, so that they will automatically reset themselves;

Fig. 6 is a diagrammatic view showing the connection between the pistol cocking mechanism and the rack bar for winding the motor.

Referring now more specifically to the sev-

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eral views, and to Fig. 1 in particular, there is shown a target practice machine comprising a casing 1, in which is mounted the pistol 2, which is universally mounted at 3 for shooting at an object to the rear of the casing 4. It will be understood that the pistol and its mounting per se forms no part of my invention and any form of casing and pistol and the manner of operating the pistol may be used.

In the rear of the cabinet 4, there is mounted a front plate 5, to which is secured a casing 6, from which extends the portion 7 which forms a return pan for the bullets (not shown) that are to be fired from the pistol. It will be seen that the front plate 5 is elevated a little with regard to this pan, so that if the bullets pass through an aperture, shortly to be mentioned, they may fall down on the pan and pass beneath the lower edge of the plate 5 or if they strike the outside of the plate 5 they will simply drop on the pan and return to the front of the cabinet. For securing the plate 5 and its associated parts in place, as may be seen, a foot or stand 8 is riveted, as at 9, to the casing 6 and this foot will be secured to the lower part of the box or cabinet. Slottedly held to the foot 8 by the small bolt 10 is the rack bar 11 which, in turn, operates the pinion 12, which is keyed to the main drive shaft A. There will also be seen loosely mounted on this shaft A the large gear 13 which, in turn, is provided with the various pawls 14, which engage with the ratchet gear 15, which is likewise keyed to the shaft A.

Mounted above this shaft A, on the shaft B, is a small gear 16 operated by the gear 13, and likewise to therear on this shaft is mounted the large gear 17, which latter engages with the pinion 18 which, in turn, is mounted on the target revolving shaft C. On the shaft C is mounted the gear 19, which meshes with a suitably mounted pinion 20 on which there is a fan 21, which is common to spring motors for holding down the speed of the gear train.

It is thought that this short description of the gear train and spring motor is sufficient, as it is similar in most spring motors.

Referring to Fig. 2 for the moment, there may be seen a spring 22, one end of which is fastened, as at 23, to the rear cover plate, and the other end 24 of which is fastened to the main drive shaft A. A small guard 25 is seen also fastened at the end 23 of the spring and extends up in front of the flat coil spring to hold the same in place.

In Fig. 1, there may be seen the handle 26 to operate a lever 27 after a coin has been inserted in the slot, the nose 28 of the lever being widened out and extending through an opening 29 in the foot 8 and beneath the rack bar 11. The lever 27 is arranged so that when the handle is operated, the nose 28 will

be forced forwardly, thus elevating the rack bar 11 which, it will be remembered, engages with the pinion 12 on the shaft A and will thus wind up the spring. The upper end of the rack bar is provided with a slot 30 and guided by a pin 31 and the upper end of this rack bar makes an electrical contact, which will be later described. Also, the operation of this lever 27 cocks the pistol.

Before following through the operation of the gear train, it will be noticed that pinned on the shaft C is a sleeve 32, while the outer end of the shaft C is mounted within the plate 5. Also mounted on this sleeve is the cross bar 33, to the ends of which are mounted the targets 34, which may follow the outline of a bird or any fanciful object. It will be noticed that these targets 34 have a lug 35 to the rear thereof to be pivoted within the ends of the cross bar. It might be well to mention here that there is an aperture 36 in the plate 5, so that when the cross bar is in its vertical position, the upper target will be in front of the aperture, as shown in the dotted lines in Fig. 3.

Should this target be struck and knocked to the position shown in Fig. 3, it will, by gravity, when revolving, right itself to a vertical position, as also may be seen in Fig. 3. In other words, by providing a lug to the rear of the target, the weight of the target being off-center will gravitate to a vertical position, where it will remain during the rest of its revolutions until knocked down by another bullet.

Referring for the moment now to the manner of illuminating the target while the mechanism is in operation, it will be seen that the upper end 37 of the rack bar 11 will contact with the spring finger (properly insulated), as at 39, while from the spring finger, there is a circuit connected with a small light 40, which is mounted on the casing 6, while casing has an aperture 41 directly under the light, so that when the light is on, it will illuminate the target. The circuit then is connected to the small cells 42 that are respectively held in place by the clips 43, and one of the leads from the batteries may be grounded to the winding mechanism to thus complete the circuit. Therefore, when the rack bar is in operated position, it will contact with the spring finger until it has again descended and the motor is unwound.

Operation

The operation is exceedingly simple. It is only necessary to operate the handle 26 to operate the lever 27 which will cock the pistol and raise the rack bar which, in turn, will wind up the spring through the pinion 12. The ratchets engaging the pawls will cause spring to drive the large gear 13 and through the several pinions and gears described will operate the main target shaft C, as will be read-

ily understood. The targets 34 will intermittently appear in front of the aperture and the person practicing will then fire the pistol. If the operator hits the target, it will be knocked rearwardly, that is, on its pivot point, and in its descending motion will right itself by gravity, so that when it again appears in front of the aperture it will be in its upright position. The light will remain lighted until the rack bar has disengaged itself from the spring finger 38, as will be readily understood. The bullets will then, by gravity, fall down the pan 7, where they may be again replaced within the pistol.

From the foregoing, it will be seen that I have designed an attachment or target setting mechanism for target practice machines, that is, wholly operated by a spring motor, wherein the same may be either built with new machines or may be attached to machines already in use. Furthermore, the targets are illuminated by small light cells that may be replaced when necessary, so that there is no chance of the operator receiving the shock. Again, the machines being self-contained may be moved about without any reference to any connections with the lighting circuit.

Finally, it will be seen that it takes only a short stroke of the lever to wind up the machine and that it is not necessary to reset the targets by hand if the operator is skilled enough to knock them down. It will also be seen that the whole device is very compact and all of the parts are mounted on a plate and a bracket, which may be easily fitted within a target practice machine.

Many slight changes might be made without in any way departing from the spirit and scope of the invention.

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

1. A target practice mechanism in the form of a unit comprising a front plate, a spring motor, said plate provided with an aperture therein, targets to be revolved by said spring motor and passing in front of said aperture and said targets pivotally mounted so that the same may be forced rearwardly when struck, said targets also arranged to right themselves by gravity before they approach said aperture, rack and gear means for winding said motor, a pan connected with the attachment to provide a return for the bullets projected at said targets, and a lighting mechanism for illuminating the targets connected with the rack whereby said lighting mechanism will be automatically turned on during the revolutions of said motor.

2. A target actuating and resetting mechanism comprising a unit, said unit consisting of a face plate, a casing behind said face plate and a spring motor attached to the

rear of said casing, a rack cooperating with a gear in said spring motor for winding said motor, an electric lighting system for illuminating the targets connected with said rack whereby the system will be turned on when the motor is in its wound condition, a pan connected with the unit for allowing the bullets projected at said targets to run forwardly beyond the plate, said plate provided with an aperture, and revolving targets connected with the spring motor, whereby said targets rotatably successively appear in front of said aperture and said targets being pivotally mounted whereby the same may fall rearwardly when struck and also so mounted as to right themselves by gravity before they appear in front of the aperture.

3. A mechanism for target practice machines comprising a unitary structure, said structure consisting of a front plate, a casing and a spring motor attached to said casing, said front plate provided with an aperture, targets mounted on the shaft of the motor and to appear successively in front of the aperture, said targets pivotally mounted at their bases whereby the same may be knocked rearwardly and by gravity will right themselves before they appear in front of the aperture, a rack bar cooperating with said motor to wind the same when the rack bar is actuated, a light on said unit, battery clips for holding electric batteries, and the rack bar forming an electrical connection between the battery and the light to turn on the current after said rack bar has wound up the motor.

In testimony whereof I affix my signature.
JOHN REMONTE.

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