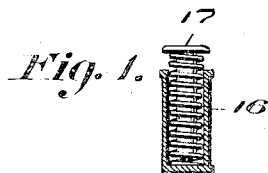
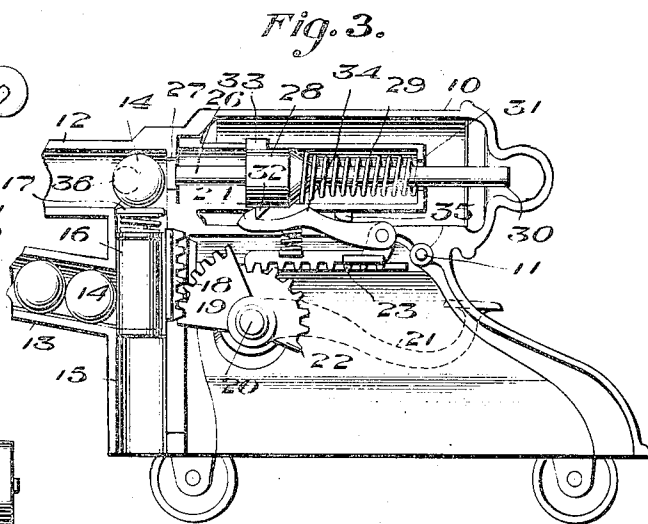
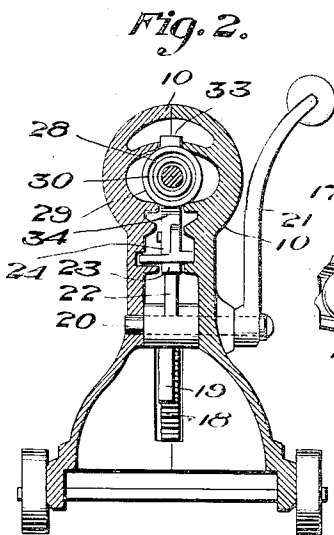
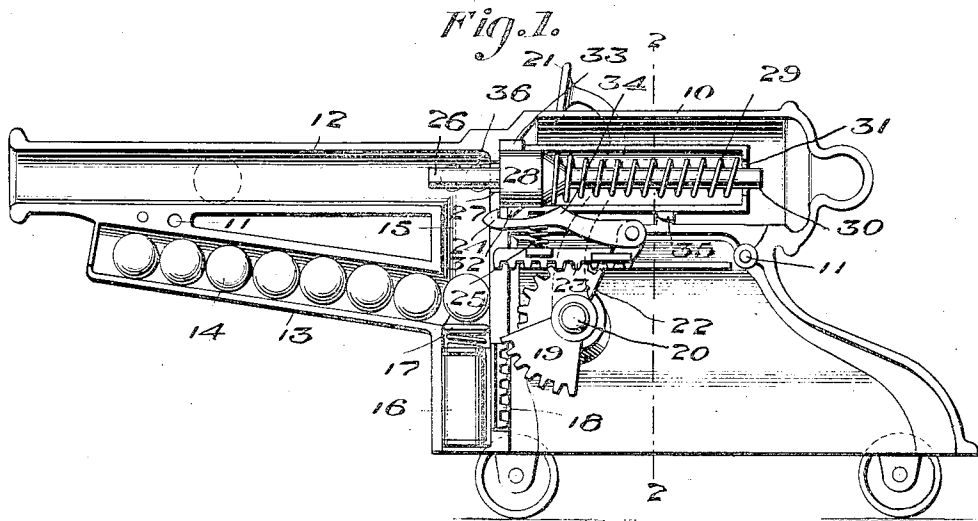


J. D. KILGORE.
TOY CANNON.
APPLICATION FILED MAY 5, 1916.

1,258,018.

Patented Mar. 5, 1918.



Witness

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UNITED STATES PATENT OFFICE.

JOSEPH D. KILGORE, OF HOMESTEAD, PENNSYLVANIA.

TOY CANNON.

1,258,018.

Specification of Letters Patent.

Patented Mar. 5, 1918.

Application filed May 5, 1916. Serial No. 95,582.

To all whom it may concern:

Be it known that I, JOSEPH D. KILGORE, a citizen of the United States, residing at Homestead, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Toy Cannons, of which the following is a specification.

The present invention relates to toy cannon, particularly of that type in which a magazine feed is provided for projectiles of any suitable type, a feeding mechanism being arranged in such relation to the magazine as that the ammunition contained therein will be fed singly to firing position within the barrel, discharging mechanism being provided by means of which the projectiles may be ejected from the cannon, operating means being so arranged as that upon manual manipulation of such operating means the projectiles within the magazine will be automatically and successively brought to firing position and discharged, so that there is provided a repeating cannon which so long as the magazine is provided with projectiles will continue to discharge such projectiles if the firing mechanism is manually operated.

In the drawings herewith I have illustrated one form of my invention, and in said drawings,—

Figure 1 is a sectional view on a vertical plane longitudinally of the cannon.

Fig. 2 is a section on a vertical plane transversely of the cannon and substantially on the line 2—2 of Fig. 1.

Fig. 3 is a detail sectional view on a vertical plane longitudinally of the cannon, showing the firing mechanism in retracted position.

Fig. 4 is a detail view in section of the elevating mechanism for the projectiles.

Referring to the drawings by numbers, like numbers indicating like parts, in the several views, 10 indicates the frame of the cannon which may be conveniently made in two substantially similar castings, so chambered as to provide, when brought together, as shown in Fig. 2, suitable receiving chambers for the projectiles, the projectile elevating means and the projectile discharge means, these castings being preferably secured by means of bolts or screws designed to pass through suitable apertures 11 provided at appropriate places in the castings.

The cannon thus formed is preferably provided with suitable supports, as wheels.

The barrel 12 of the cannon is provided with a bore of proper size to receive and permit the ready discharge of the projectiles used, and below said barrel and preferably cast integral therewith is a magazine chamber 13 having an open front and designed to receive the projectiles 14 which may be of any desired material, as, for example, rubber balls. The magazine is inclined, as shown in Fig. 1, so that the projectiles 14 tend to roll to the elevating chamber 15 which communicates at its upper end with the barrel 12, and in the lower end of which chamber 15 is mounted the elevating plunger 16, the said plunger, as shown in Fig. 4, comprising a casing within which is mounted a spring-projected element 17 which normally stands in the position shown in Figs. 1 and 4, but which may be depressed, as hereinafter explained, against the tension of its spring and forced into the casing of the plunger 16. The said plunger 16 has a rack 18 which projects through a slot or opening in the wall of the chamber 15, so that it may be readily engaged with a segment 19 mounted to rotate with a shaft 20 journaled in suitable bearings in the side walls of the casing 10, one end of the shaft 20 being provided with a manually operable handle 21, by means of which an oscillating movement may be given to the shaft 20 and through the segment 19 and rack 18 the plunger 16 may be elevated from the position shown in Fig. 1 to that position shown in Fig. 3, the result of this movement being to elevate a projectile 14 to the position shown in Fig. 3, in which position this projectile 14 will be lightly clamped between the top wall of the barrel 12 and the spring element 17 of the plunger 16, this gripping of the projectile 14 being sufficiently strong to prevent any accidental escape of the projectile due to a tilting of the barrel 12, but not of sufficient strength to interfere with the discharge of the projectile when the firing mechanism, which will now be described, is operated.

The said shaft 20 is provided with a second segment 22 fixed so as to revolve therewith, and this said second segment 22 engages a rack 23 mounted in a suitable guideway in the frame 10, said rack having pivoted thereto, as shown in Figs. 1 and 2, a latch 24 which is normally urged upward by a spring 25 interposed between the sliding rack 23 and the said latch 24. The said rack

with its pivoted latch will normally lie in the position shown in Fig. 1, but upon rotation of the shaft 20 through the manual manipulation of the handle 21 the segment 22 in engagement with the rack 23 will throw
 5 that rack and its pivoted latch rearwardly toward the breech of the cannon and to the position as substantially shown in Fig. 3.

In a suitable chamber in the frame 10 above the rack 23 and its pivoted latch 24 is mounted the firing bolt 26, the forward end of which is adapted to be protruded, when released, through an opening 27 immediately behind the position of rest of the
 15 projectile 14 when elevated by the plunger 16. The said firing bolt has an enlargement 28 which forms an abutment for a propelling spring 29 surrounding the tail of the bolt 30, the rear end of the spring 29 bearing against the rear wall 31 of the bolt-receiving chamber, as shown in Figs. 1 and 2. The enlargement 28 is provided with a latch-engaging projection 32 which is dis-
 25 posed in such relation to the latch 24 that on retraction of the latch through the medium of the rack 23 and its operating segment the projection 32 will be engaged and the firing bolt forced rearwardly to approximately the position shown in Fig. 3, compressing the spring 29, and in order that the
 30 firing bolt may be maintained in a proper position to insure engagement of the projection 32 and the latch 24, there is provided a guiding projection 33 which engages a slot or runway in the wall of the chamber, so that the bolt is maintained always in
 35 proper position for engagement with the latch.

The said latch 24 will be maintained always in engagement with the projection 32 until the bolt has been retracted a little beyond the position shown in Fig. 3 and the point where a projection 34 on the latch will engage a fixed releasing stop 35 on the
 45 wall of the frame 10. Immediately the projection 34 rides over the fixed stop 35 the latch 24 will be depressed against the tension of the spring 25, the nose of the latch will be disengaged from the projection 32, and the firing bolt released, whereupon the
 50 spring 29, which has been compressed as the bolt is retracted, will throw the firing bolt forward, and its firing end 26 striking the projectile 14, which is lightly gripped between the spring element 17 and the upper
 55 wall of the barrel 12, will propel it violently from the barrel 12.

Upon return of the firing handle 21 to the position shown in Fig. 1, the lifting
 60 plunger 16 and the firing latch 24 will be returned to their normal positions, as shown in Fig. 1, and a succeeding projectile will feed from the magazine 13 into the chamber 15 above the plunger 16 in position to be
 65 elevated for firing position.

In order that the condition of load may be readily ascertained, I preferably provide sight openings 36 on either side of the barrel at the loading position of the projectile 14, so that it may be readily ascertained
 70 whether or not there is a load in place for firing.

From the foregoing it will be seen that a construction is provided by means of which an automatic and continuous discharge of
 75 projectiles may be secured so long as the magazine is filled with ammunition and the handle 21 is manipulated in the manner above described.

While I have shown a particular construction, it will be understood that variations in mechanical details may be made without departing from the spirit of my invention, and I do not, therefore, limit myself to the exact
 80 details shown and described, except in so far as I am limited by the terms of the appended claims.

What I claim is:—

1. In a cannon, in combination a barrel, a spring pressed shooting plunger, a plunger
 90 head on said plunger, a rack, a catch pivoted at one end on said rack and engaging the plunger head at the other end, a geared sector engaging said rack, means to operate the sector to move the rack, and a trip to
 95 disengage the catch from the plunger head.

2. In a cannon, in combination a barrel, a spring pressed shooting plunger, a plunger
 100 head on said plunger, a rack, a catch pivoted at one end on said rack and engaging the plunger head at its other end, a spring to hold the catch normally pressed against the plunger head, a geared sector engaging
 105 said rack, means to operate the sector to move the rack, and a trip to disengage the catch from said plunger head.

3. In a repeating cannon, in combination, a barrel, a spring bolt mounted in the rear thereof and adapted to eject a projectile from said barrel, a magazine, an ammunition
 110 chamber communicating with said barrel to which said magazine delivers, bolt operating mechanism comprising a manually operated rotary shaft, a segment thereon, and a bolt-engaging latch operated by said
 115 segment, a feeding plunger in said ammunition chamber, a second segment on said bolt-operating shaft engaging said plunger, and means carried by said plunger to maintain a projectile in position for firing.
 120

4. In a repeating cannon, the combination with a barrel and firing chamber, of a spring firing bolt in said chamber, a sliding
 125 plate below said chamber, a bolt-engaging latch carried by said plate, manually operated means for retracting said plate and latch, and means for tripping said latch at a predetermined point to release said spring bolt.

5. In a repeating cannon, the combination 130

with a barrel, an inclined magazine, a vertical loading chamber to which said magazine delivers and which communicates at its upper end with said barrel, a loading plunger in said loading chamber, a firing bolt in rear of said barrel adapted to eject a projectile therefrom, a bolt retracting spring latch releasable at a predetermined point engaging said firing bolt, a manually operated shaft, a segment on said shaft to retract said latch and bolt, and a second segment on said shaft to elevate said loading plunger.

6. In a repeating cannon, the combination with a barrel and firing chamber, of a spring firing bolt in said chamber, a sliding plate in said chamber, a latch pivotally carried by said plate, means for retracting said plate and latch, and means for tripping said latch at a predetermined point to release said spring bolt.

7. In a cannon, in combination, a barrel,

a loading chamber and a loading plunger in said chamber comprising a tubular casing, a stem in said casing, and a spring in said casing and about said stem for urging the stem outwardly to resiliently hold a projectile in firing position in said barrel. 25

8. In a cannon, in combination, a barrel, a loading chamber, a loading plunger in said chamber, a coiled metallic spring carried by said loading plunger, and a cap on top of said spring, said spring being adapted to urge said cap against a projectile to resiliently hold the same in firing position in said barrel. 30 35

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

JOSEPH D. KILGORE.

Witnesses:

J. C. WILLIAMS,
GEORGE C. CURTZ.