J. B. BLACKSHEAR.

TOY CANNON.

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1,289,622. Patented Dec. 31, 1918.

Fig. 1.

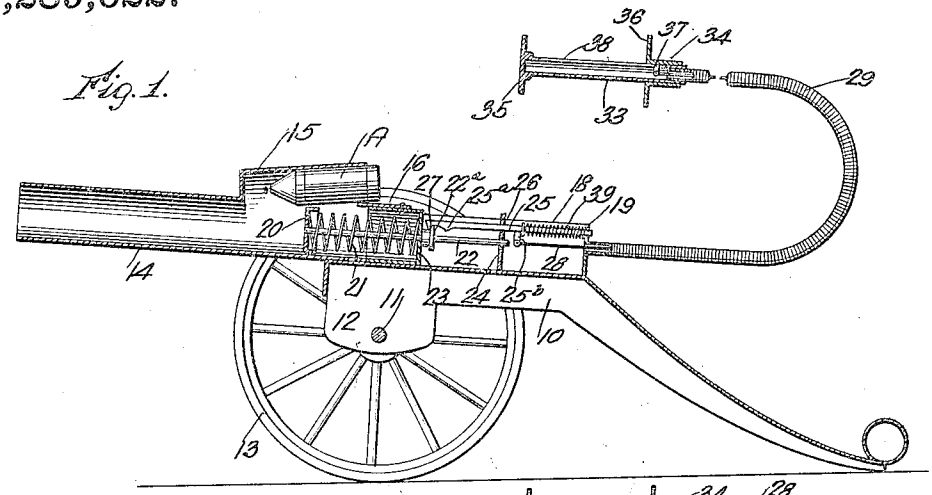


Fig. 2.

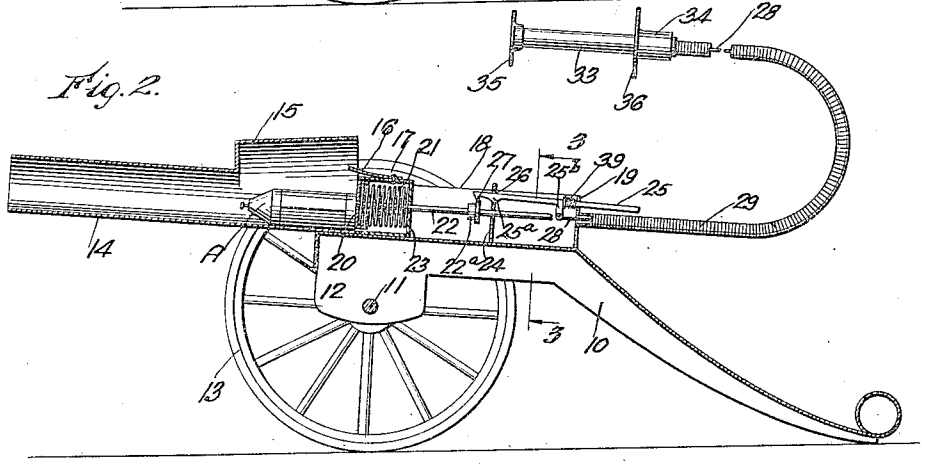


Fig. 3.

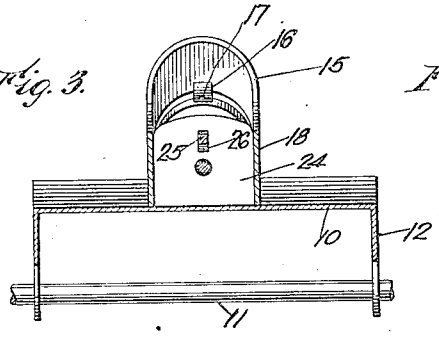
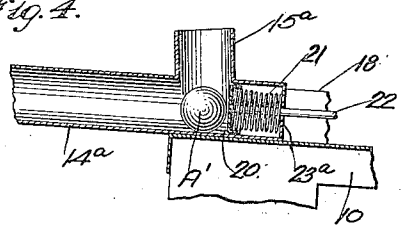


Fig. 4.



WITNESSES.

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1,289,622. Specification of Letters Patent. Patented Dec. 31, 1918.

Application filed February 16, 1918. Serial No. 217,600.

To all whom it may concern:

Be it known that I, JAMES B. BLACKSHEAR, a citizen of the United States, and a resident of the city and county of Honolulu, Territory of Hawaii, have invented a new and Improved Toy Cannon, of which the following is a full, clear, and exact description.

My invention although adapted for different projectiles, as will appear, is more particularly intended for the firing of a sectional projectile adapted to be disrupted in striking an object, such a projectile forming the subject-matter of a separate application of even date herewith, Serial No. 217,598.

An object of the invention is to provide a toy cannon improved in various particulars with respect to the breech and the elements associated therewith to insure the proper insertion of the projectile with facility and also with respect to the firing means, trigger, and the controlling means therefor.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar reference characters indicate corresponding parts in all the views, it being understood that the drawings are merely illustrative of one example of the invention.

Figure 1 is a partly sectional side elevation of a cannon embodying my invention, showing a cartridge entered in the breech in position to take its place in front of the ejecting plunger, the latter and its control trigger being shown in the forward position;

Fig. 2 is a view similar to Fig. 1 but showing the projectile in position in front of the plunger, the plunger and trigger being in the released position to permit the plunger to discharge the projectile;

Fig. 3 is a cross section on the line 3—3, Fig. 2;

Fig. 4 is a fragmentary view similar to Fig. 2 but illustrating a slight modification of the barrel to take a round projectile.

In carrying out my invention, the structure includes a suitable frame or supporting body 10 mounted on a wheeled axle 11, the numeral 13 indicating a wheel and the numeral 12, depending brackets on the body 10 integral therewith, through which brackets the axle 11 extends.

The barrel 14 of the cannon has an arched breech 15, the rear end of which is open for the entrance of a projectile A, the particular form of the projectile illustrated not constituting a part of the present invention but being the subject matter of the concurrent application above mentioned. The height of the arched breech 15 is preferably slightly less than the diameter of the projectile A to require that the projectile be forced into said breech. The material of the arched breech 15 is slightly yielding so that in forcing the projectile against the top of the arch the sides of the arch will be slightly sprung inwardly and the arch will tend to restore itself after the projectile has entered, thereby tending to throw the projectile downwardly in front of the ejector hereinafter described.

On the barrel at the rear end a retaining spring 16 may be employed, projecting into the housing 16 and being adapted to yield downwardly to permit the projectile to pass beyond the spring and be engaged by its end. Said spring is secured in any suitable manner as by a rivet 17. In the rear of the breech and in line with the barrel is a frame 18 of any suitable form, closed at its rear end 19 and formed with, or secured at its front end to, the rear end 23 of the barrel or breech chamber. Operating in the barrel at the breech is an ejector including a head or plunger 20 and a reciprocating plunger rod 22 which extends through the end 23 and through a transverse partition 24 of the frame 18. A coil spring 21 surrounds the rod 22 between the head 20 and the end closure 23. A trigger 25 is arranged slidably in the frame 18 and has longitudinal movement in a vertical opening 26 in the partition 24 and through an orifice in the end 19 of said frame, whereby to have guided reciprocating movement. The forward hooked end of the trigger presents a catch 27 adapted to engage a flange or collar 22^a on the rod 22, which collar in the illustrated form limits the forward movement of the rod under the action of the spring 21.

The arrangement is such that a rearward pull on the trigger 25, when the latter is engaged with the collar 22^a, will move the plunger rod 22 and the head 20 rearwardly,

thereby compressing the spring 21 and permitting the projectile A to take its place in front of said plunger as indicated in Fig. 2. The barrel is slightly inclined to prevent the projectile from accidentally sliding from the barrel. To operate the trigger to exert a rearward pull on the rod 22, I provide a wire 28 or equivalent flexible element which is secured at its forward end to a lug 25^b or the like on the trigger and extends through the rear end 19 of the frame 18 and through a flexible tubular element 29 which may be made of coiled wire after the manner of a flexible shaft and the forward end of said tubular element 29 being secured to the frame 18. On the tubular element 29 at the rear end is a rigid tube section 33, slidable on which is a sleeve 34 having a lug 37 thereon projecting radially inward through a longitudinal slot 38 in the tube section 33 and to which lug the outer end of the pull wire 28 is fastened. The tube 33 and sleeve 34 have flanges 35, 36 respectively thereon, so that the operator may place his thumb against the flange 35, that is, against the end of the tube 33 and grasp the flange 36 between the fingers of the same hand to draw the flanges toward each other, whereby to exert a pull on the wire 28. The numeral 39 indicates a spring coiled about the trigger 25, between the lug 25^b and the end 19 of the frame 18 and constituting one example of a means to restore the trigger and the pull wire 28.

The projectile A having been inserted in the breech 15, and with the plunger 20 in the forward position, the projectile will rest on the plunger and will be retained by the spring 16 until the plunger is drawn rearwardly against the tension of the spring 21 by a relative movement of the flanges 35, 36 to exert a pull on the wire 28 and draw the trigger 25 rearwardly. Before the trigger has arrived at the limit of its rearward movement, the ejector head 20 will have moved rearwardly to permit the projectile A to take its place in front of said head. In order to cause the further rearward movement of the trigger 25 to release the plunger rod 22 by disengagement from the collar 22^a, I form a cam 25^a on the trigger which is adapted to engage the partition 24 at the bottom of the notch 26, thereby rocking the trigger sufficiently to disengage the notched end 27 thereof from the collar 22^a, thus releasing the plunger rod and permitting the spring 21 to throw the ejector forwardly for discharging the projectile.

In the form shown in Fig. 4 the barrel 14^a has an upstanding tubular inlet 15^a at the breech through which a round projectile A′ may be dropped. The other parts indicated in the figure correspond with those first described and therefore bear the same identifying characters.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

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

1. A toy cannon including a barrel, a structure on which said barrel is mounted, a breech chamber constituting an enlargement of the barrel, said breech chamber having an open rear end through which a projectile may be entered approximately parallel with the barrel, a spring-pressed plunger in the barrel at the breech chamber and adapted when in the forward position to form a temporary rest for the projectile, a retaining spring at the rear end of the breech chamber, said spring being yieldable to an entering projectile and adapted to engage the rear end of the same after entrance in the breech chamber, the plunger being movable to a rearward position to permit the projectile to take its place in the barrel in front of the plunger and out of engagement with the retaining spring, and means to control said plunger.

2. A toy cannon including a barrel adapted to receive a projectile, a spring-pressed ejector for discharging a projectile from the barrel, a rectilineally reciprocating element normally engaging the ejector and adapted to carry the same rearwardly and compress the spring thereof, means to actuate said reciprocating element, and means to automatically release the ejector from said element after the spring of the ejector has been compressed.

3. A toy cannon including a barrel, a spring-pressed plunger in the barrel at the breech, adapted to eject a projectile, a plunger rod extending rearwardly from the plunger, a longitudinally slidable trigger in the rear of the barrel, coacting members on said trigger and rod, a spring tending to maintain the trigger in a forward position with said coacting members in engagement, means to reciprocate the trigger to give rearward movement thereto for imparting a rearward movement to the plunger rod and plunger, means to restore the trigger to the forward position, and means to disengage the trigger from the plunger rod by an extreme rearward movement of the trigger.

4. A toy cannon including a barrel, a spring-pressed plunger therein for firing a projectile, a frame in the rear of the barrel, a plunger rod carried by said plunger, the plunger rod extending longitudinally of said frame, a trigger mounted to reciprocate in the said frame, coacting elements on the trig-

ger and plunger rod adapted to be engaged or disengaged so that a rearward movement of the trigger will draw the plunger rod and plunger rearwardly, a flexible pull element connected with the trigger and extending rearwardly beyond the frame, a tubular flexible member through which said pull element extends, means slidable on the rear end of said tubular member and connected with the rear end of the said pull element, and means to effect a disengagement of the trigger and plunger rod upon the final rearward movement of the trigger.

JAMES BAYARD BLACKSHEAR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."