

1,175,803.

Patented Mar. 14, 1916.
3 SHEETS—SHEET 1.

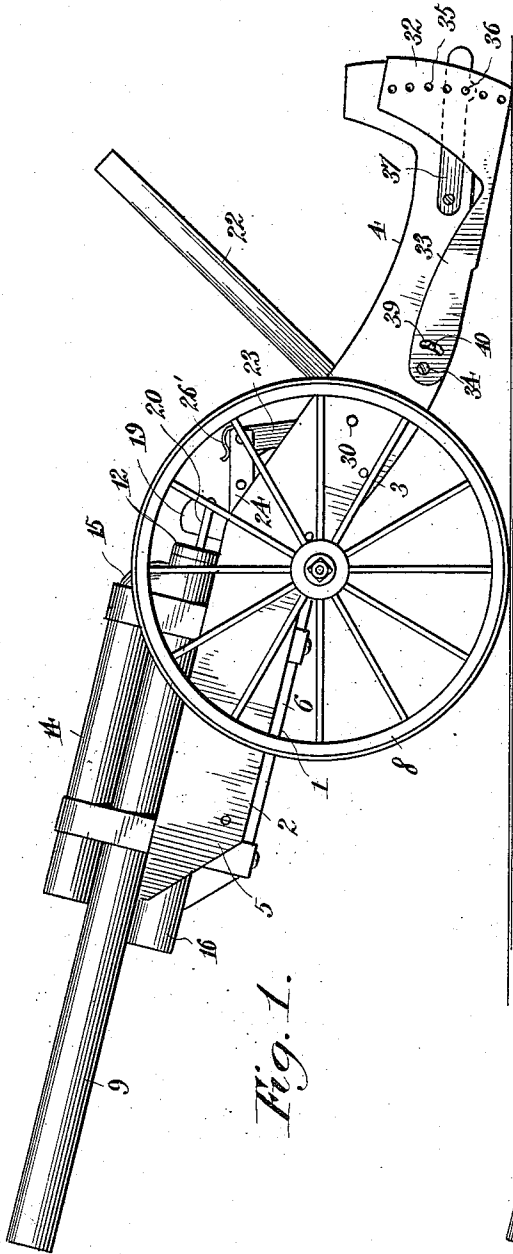


Fig. 1.

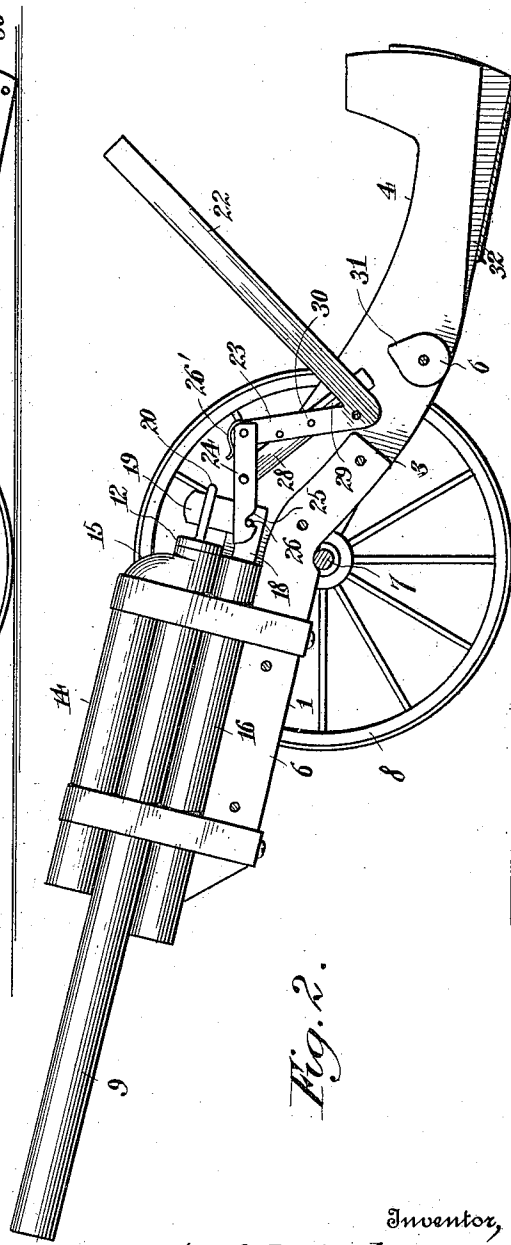


Fig. 2.

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Fig. 3.

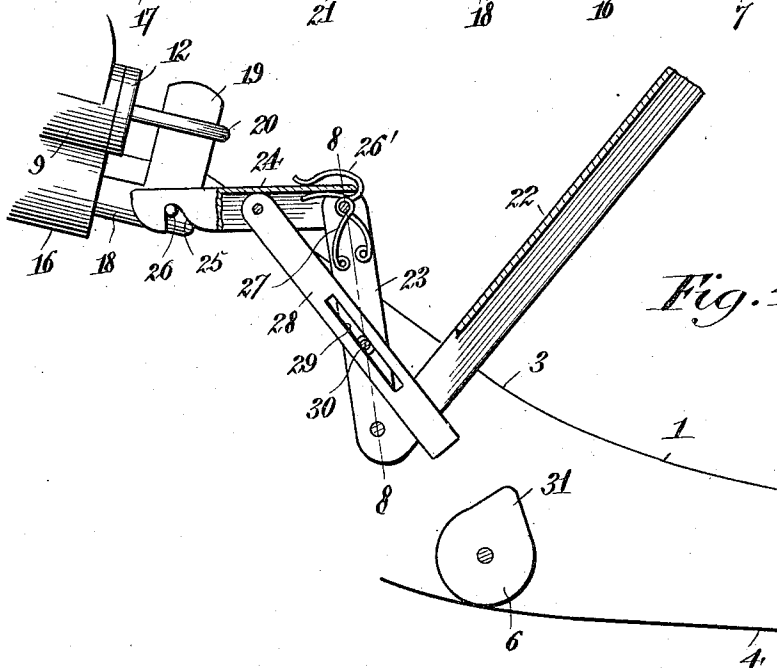
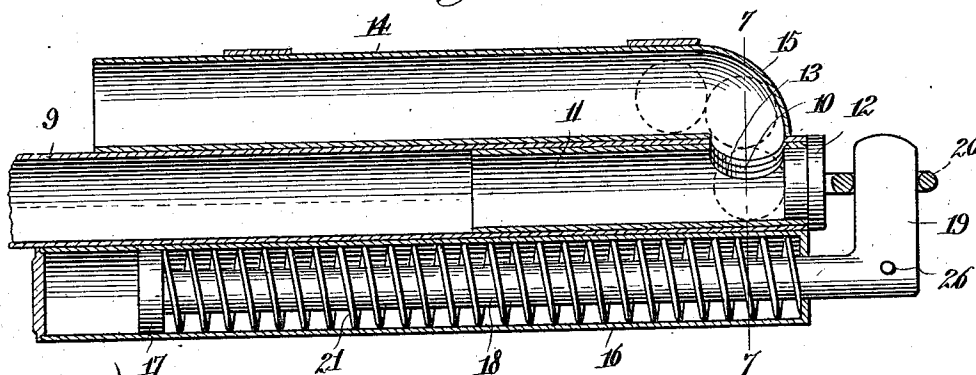
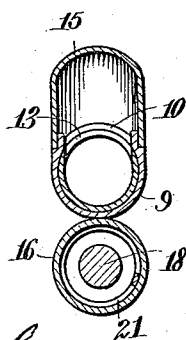


Fig. 4.

Fig. 7.



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TOY CANNON.
APPLICATION FILED JUNE 23, 1915.

Patented Mar. 14, 1916.
3 SHEETS—SHEET 3.

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Fig. 5.

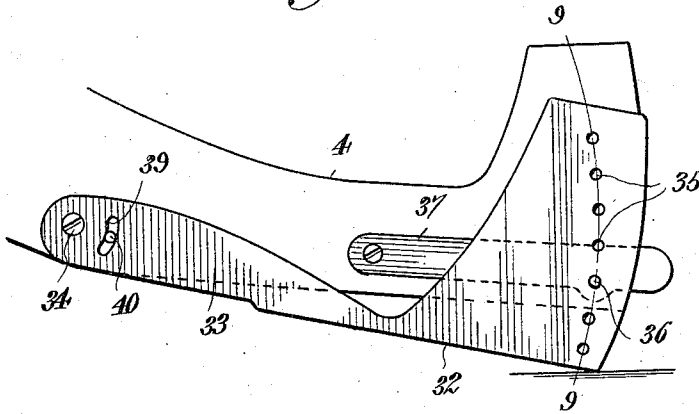


Fig. 6.

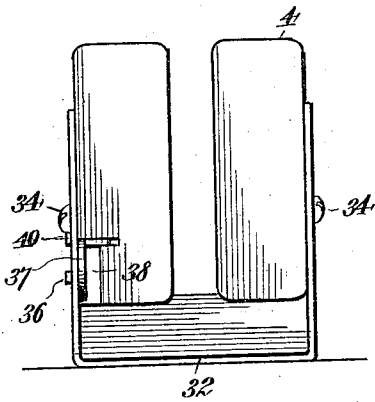


Fig. 8.

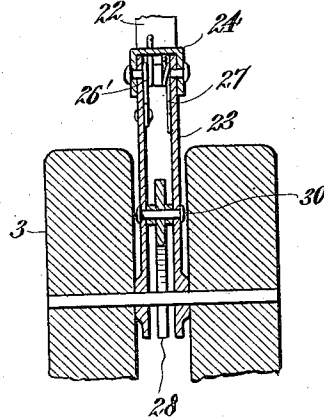
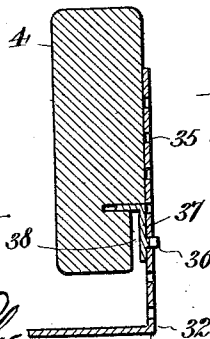


Fig. 9.



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UNITED STATES PATENT OFFICE.

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TOY CANNON.

1,175,803.

Specification of Letters Patent.

Patented Mar. 14, 1916.

Application filed June 23, 1915. Serial No. 35,832.

To all whom it may concern:

Be it known that I, CARL B. OSBORN, a citizen of the United States, residing at San Marcos, in the county of Hays and State of Texas, have invented new and useful Improvements in Toy Cannon, of which the following is a specification.

This invention relates to improvements in toy cannons and has particular application to a magazine cannon.

In carrying out the present invention, it is my purpose to provide a toy cannon which will be found especially useful by children and whereby marbles and analogous spherical objects may be fed to the barrel of the cannon automatically in the use of the cannon and fired from the barrel to the delight and entertainment of the child.

It is also my purpose to provide a magazine toy cannon wherein the range of the cannon may be varied so that objects at different distances from the cannon may be struck by the missiles discharged therefrom.

A further object of my invention is to improve and simplify the general construction of devices of the class described and to provide a toy cannon wherein the component parts will be so arranged and correlated as to reduce the possibility of derangement to a minimum, and which will operate efficiently and effectively for its intended purpose.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the claims.

In the accompanying drawings; Figure 1 is a view in side elevation of a magazine toy cannon constructed in accordance with my present invention. Fig. 2 is a longitudinal sectional view therethrough. Fig. 3 is an enlarged fragmentary longitudinal sectional view through the barrel and associated parts. Fig. 4 is an enlarged fragmentary longitudinal sectional view through the cannon, showing the mechanism controlling the discharge of the missiles from the cannon. Fig. 5 is an enlarged side elevation of the range varying mechanism. Fig. 6 is an end view of the same. Fig. 7 is a sectional view on the line 7—7 of Fig. 3. Fig. 8 is a similar view on the line 8—8 of Fig. 4. Fig. 9 is a sectional view on the line 9—9 of Fig. 5.

Referring now to the drawings in detail, 1 designates a wheeled carriage comprising

a body having a substantially horizontal front portion 2, a depending portion 3 at one end of the front portion 1 and a rearwardly extending substantially horizontal portion 4 projecting rearwardly from the lower end of the depending portion 3. This body is preferably, although not necessarily, formed of two strips of material 5 secured to each other and held spaced apart by means of spacers 6, and secured to the body at the juncture of the front portion 2 with the depending portion 3 is an axle 7 and journaled upon the outer ends of the axle 7 are supporting wheels 8.

9 designates the barrel of the cannon, which barrel is in the form of an elongated tube having the upper surface thereof formed, at the breech end, with an opening 10. Slidably mounted within the breech end of the barrel is a projector tube 11 having the discharge end thereof open and the rear end closed by means of a cap 12 and formed in the projector tube 11 is an opening 13 adapted to register with the opening 10 in the barrel when the projector tube is in normal position. Mounted upon the barrel 9 is a relatively short magazine tube 14 having the front end thereof terminating behind the discharge end of the barrel and the rear end opening into the barrel by way of the opening 10 and formed with a curved end wall 15 acting to guide the marbles or other missiles in the magazine tube through the opening 10 and the opening 13 in registration with the opening 10 into the projector tube 11. Secured to the lower surface of the barrel 9 is a tube 16 and slidably mounted within the tube 16 is a piston 17, while connected with the piston 17 is a propelling rod 18 projecting outwardly through the rear end of the tube 16 and having the rear end thereof bent at right angles to itself and extended upwardly as at 19. The upwardly projecting portion 19 of the propelling rod is connected with an eye 20 secured to the cap 12 closing the rear end of the projector tube 11. Encircling the propelling rod 18 within the tube 16 is a coiled expansion spring 21 having one end abutting the piston and the remaining extremity in engagement with the rear end wall of the tube 16. In this instance, the tubes 14, 9 and 16 are fastened to one another by means of straps and are mounted between the strips at the front portion 2 of the body of the carriage and secured to such strips,

Pivoted between the strips 5, 5 at the juncture of the depending portion 3 of the body with the rearwardly projecting portion 4, is a rearwardly extending lever 22 having the forward end thereof formed with an upwardly extending arm 23 arranged at an acute angle to the lever and pivotally connected to the upper end of the arm 23 is one end of a latching finger 24 projecting toward the barrel of the cannon and having the lower edge thereof, adjacent to the front end, formed with a notch 25 adapted to engage a pin 26 secured to the propelling rod 18 at the juncture of the rear end of the rod with the upwardly extending portion 19.

26' designates a leaf spring having one end fastened to the upper end of the arm 23 and the remaining end bearing against the upper edge of the finger 24, while 27 designates a spring surrounding the pivot pin of the finger 24 and having one limb bearing against the arm 23 and the remaining limb engaging the lower edge of the finger 24. This spring 27 is relatively weak as compared with the spring 26' and serves to hold the finger 24 normally elevated and in engagement with the spring 26'. Pivotally connected with the finger 24 is the upper end of a vertical release rod 28 formed with a slot 29 within which works a pin 30 carried by the arm 23, such pin and slot serving to maintain the rod 28 normally in vertical position. Secured to the inner surface of one of the strips 5 and disposed in the path of movement of the lower end of the trip rod 28 is a lug 31.

In practice, the magazine tube 14 is filled with marbles or similar missiles and as the opening 13 in the projector tube 11 is normally in registration with the opening 10 in the barrel, the marble at the rear end of the magazine tube drops into the projector tube and rests against the cap 12 and holds the remaining marbles in the magazine tube, the barrel of the cannon being inclined upwardly from the breech end toward the discharge end so that the marble in the projector tube will rest against the cap 12 and hold the remaining marbles in the magazine tube. When it is desired to discharge the marbles from the barrel, the lever 22 is swung upwardly about its pivotal connection with the body and in the upward movement of the lever 22 the arm 23 is swung forwardly and the forward end portion of the lower edge of the finger 24 rides over the pin 26 and is elevated slightly against the action of the spring 26'. As the finger 24 continues to move forwardly under the action of the arm 23 the notch 25 drops into engagement with the pin 26. After the pin 26 is engaged in the notch 25, the lever 22 is swung downwardly and in the downward movement of the lever 22, the arm 23 swings

rearwardly and so pulls the finger 24 and the tube 11. In the outward movement of the tube 11 the opening 13 therein is moved out of registration with the opening 10, thereby cutting off communication between the projector tube and the magazine tube so that the marbles in the magazine tube will be held therein. Simultaneously with the cutting off of communication between the magazine tube and the projector tube, the spring 21 surrounding the propelling rod 18 in the tube 16 is compressed incident to the outward movement of the propelling rod and the piston 17 under the action of the lever 22. In the continued outward movement of the arm 23 the upper end thereof passes the fulcrum point of the lever 22 and swings through the lower portion of the arc and draws the finger 24 downwardly. In the downward movement of the finger 24 the lower end of the trip rod 28 engages the lug 31 so that in the continued downward movement of the rear end portion of the finger 24, the forward end portion thereof will be elevated with the effect to release the pin 26. Immediately upon the release of the pin 26 the spring 21 reacts and draws the projector tube 11 back into the barrel and in this movement of the projector tube the flange on the outer end of the cap 12 strikes the breech end of the barrel, thereby stopping the movement of the projector tube suddenly. Upon this sudden stopping of the projector tube, the missile therein is discharged therefrom through the barrel 9 at the target and as soon as the missile is discharged from the projector tube, a second missile passes from the magazine tube through the aligning openings 10 and 13 into the projector tube so that the cannon may again be "fired."

In the present instance, I have shown the magazine tube 14, the barrel 9 and the tube 16 as mounted one above the other and in this connection I wish it to be understood that these tubes may be arranged side by side without departing from the spirit of my invention.

The means for varying the range of the cannon comprises a substantially U-shaped yoke 32 embracing the rear end of the rearwardly projecting portion 4 of the body and formed with forwardly projecting arms 33 arranged upon the opposite sides of such portion 4 of the body and having the forward ends thereof pivoted as at 34 to said portion 4. Formed in one leg of the yoke 32 is a series of apertures 35 extending longitudinally of such leg and arranged in an arc corresponding to the arc through which the yoke swings. These openings are adapted to interchangeably receive a pin 36 carried by a spring finger 37 mounted within a groove 38 formed in the adjacent surface of the portion 4 of the body. When it is

desired to vary the range of the cannon, the yoke 32 is swung upwardly or downwardly, according as it is desired to increase or decrease the range, and when the desired adjustment has been made, the pin 36 is sprung into the adjacent aperture 35 under the action of the finger 37, the finger being held within the groove 38 in the swinging of the yoke. When the adjustment has been made, it will be seen that the distance between the portion 4 of the body and the floor will have been varied so that the discharge end of the barrel of the cannon will be elevated or lowered. In the present instance, one of the arms 33 is formed with an arcuate slot 39 struck from the pivot of such arm and disposed within the slot 39 is a stop pin 40 carried by the adjacent side of the rearwardly projecting portion 4 of the body, such pin serving to limit the movement of the yoke 32.

While I have herein shown and described one preferred form of my invention by way of illustration, I wish it to be understood that I do not limit or confine myself to the precise details of construction herein described and delineated, as modification and variation may be made within the scope of the claims without departing from the spirit of the invention.

I claim:

1. A device of the class described comprising a wheeled carriage, a barrel mounted upon said carriage and having the side wall thereof formed with an opening at the breech end, a projector tube slidably mounted within the breech end of said barrel and having the side wall thereof formed with an opening normally registering with the first-mentioned opening, a missile magazine tube secured to said barrel and arranged longitudinally thereof and having the rear end portion opening into said projector tube through said alining openings whereby the missiles will be fed into said projector tube, means for moving said projector tube outwardly of the breech end of said barrel whereby communication between said magazine tube and projector tube will be cut off, and means for actuating said projector tube to discharge the missile therefrom upon the release of said tube.

2. A device of the class described comprising a wheeled carriage, a barrel mounted upon said carriage and having the side wall thereof formed with an opening at the breech end, a projector tube slidably mounted within the breech end of said barrel and having the side wall thereof formed with an opening normally registering with the first-mentioned opening, a missile magazine tube secured to said barrel and arranged longitudinally thereof and having the rear end portion opening into said projector tube through said alining openings whereby the missiles will be fed into said projector tube,

means for moving said projector tube outwardly of the breech end of said barrel whereby communication between said magazine tube and projector tube will be cut off, a propelling rod connected to said projector tube, and a spring acting upon said rod to propel said projector tube to discharge the missile therefrom upon the release of said tube.

3. A device of the class described comprising a wheeled carriage, a barrel mounted upon said carriage and having the side wall thereof formed with an opening at the breech end, a projector tube slidably mounted within the breech end of said barrel and having the side wall thereof formed with an opening normally registering with the first-mentioned opening, a missile magazine tube secured to said barrel and arranged longitudinally thereof and having the rear end portion opening into said projector tube through said alining openings whereby the missiles will be fed into said projector tube, a lever, a connection between said lever and projector tube whereby the latter will be moved outwardly of the breech end of said barrel in the movement of said lever to cut off communication between said projector tube and magazine tube, means for disconnecting said lever from said tube, and means for actuating said tube to discharge the missile through said barrel upon the breaking of the connection between said tube and lever.

4. A device of the class described comprising a wheeled carriage, a barrel mounted upon said carriage and having the side wall thereof formed with an opening at the breech end, a projector tube slidably mounted within the breech end of said barrel and having the side wall thereof formed with an opening normally registering with the first-mentioned opening, a missile magazine tube secured to said barrel and arranged longitudinally thereof and having the rear end portion opening into said projector tube through said alining openings whereby the missiles will be fed into said projector tube, a lever, means operable automatically in the movement of said lever to disconnect the latter from said tube, and means for actuating said tube to discharge the missiles therefrom through said barrel upon the breaking of the connection between said projector tube and lever.

5. A device of the class described comprising a support, a barrel mounted upon said support and having the side wall thereof formed with an opening at the breech end, a projector tube slidably mounted within the breech end of said barrel and having the side wall thereof formed with an opening normally registering with the first-mentioned opening, means for feeding missiles through the alining openings in said barrel

and projector tube, means for moving said projector tube outwardly of the breech end of said barrel whereby the openings in said projector tube and barrel will be moved out
5 of registration with each other, and means for actuating said projector tube to discharge the missiles therefrom upon the release of said tube.

6. A device of the class described comprising a support, a barrel mounted upon
10 said support and having the side wall thereof formed with an opening at the breech end, a projector tube slidably mounted within the breech end of said barrel and
15 having the side wall thereof formed with an opening normally registering with the first-mentioned opening, a missile magazine

tube secured to said barrel having one end portion opening into said projector tube through said aligning openings whereby the
20 missiles will be fed into said projector tube, means for moving said projector tube outwardly of the breech end of said barrel whereby communication between said magazine tube and projector tube will be cut off,
25 and means for actuating said projector tube to discharge the missile therefrom upon the release of said tube.

In testimony whereof I affix my signature in presence of two witnesses.

CARL B. OSBORN.

Witnesses:

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