

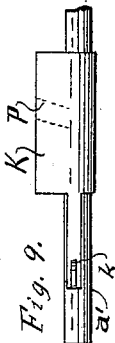
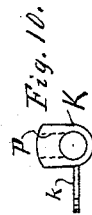
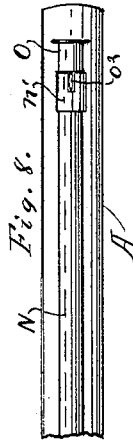
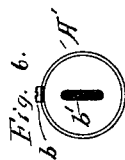
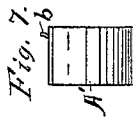
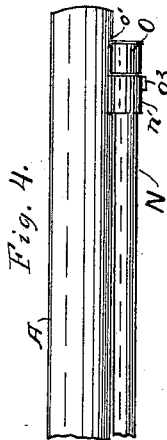
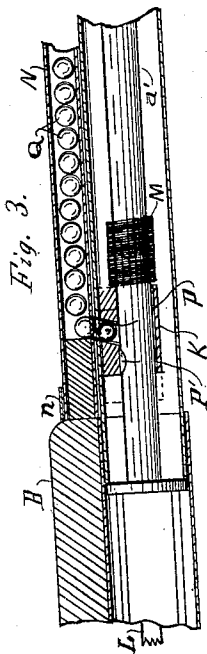
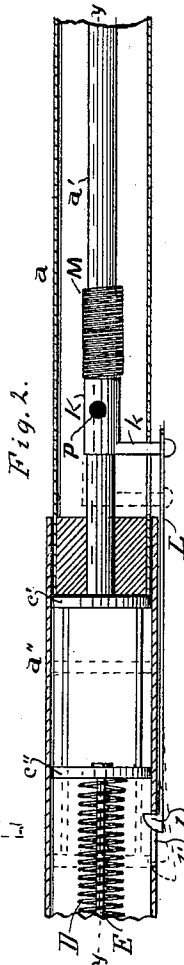
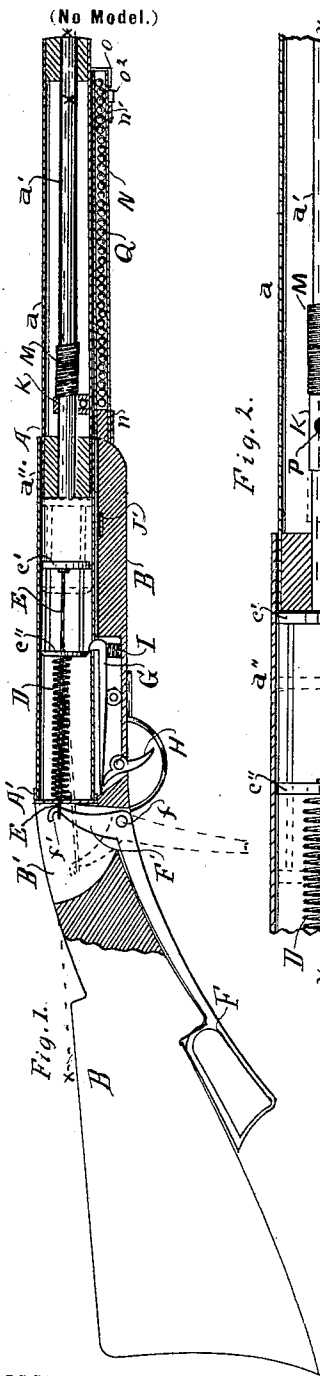
No. 614,532.

Patented Nov. 22, 1898.

W. H. CALKINS & C. A. LINDBERG.

SPRING AIR GUN.

(Application filed Feb. 11, 1898.)



Witnesses.

Walter L. Allen
W. Arnold

Inventors

William H Calkins.

Charles A Lindberg

By Kelley & Allgier
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM H. CALKINS AND CHARLIE A. LINDBERG, OF GRAND RAPIDS,
MICHIGAN.

SPRING AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 614,532, dated November 22, 1898.

Application filed February 11, 1898. Serial No. 669,960. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. CALKINS and CHARLIE A. LINDBERG, citizens of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Toy Guns, of which the following is a specification.

Our invention relates to improvements in 10 spring-actuated air-guns; and its objects are, first, to provide a magazine air-gun with which the projectile is carried to the barrel by gravity; second, to arrange a sliding transfer with the transfer-port in position normally, so that 15 air will not escape therethrough when forcibly injected into the barrel by the rebound of the piston, and, third, to provide a magazine-gun in which the transfer may be actuated automatically by the action of the charging-lever 20 or by hand when necessary. We accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the gun on the line $y y$ of Fig. 2, partly in elevation. 25 Fig. 2 is a horizontal section of the same on the line $x x$ of Fig. 1. Fig. 3 is a longitudinal section of the same on the line $y y$ of Fig. 2, showing the barrel bottom up and upon an incline to allow the shot to roll into the port 30 that conducts it to the barrel. Fig. 4 is a side elevation, and Fig. 5 is an end elevation, of the muzzle of the gun. Fig. 6 is a side, and Fig. 7 is a front, elevation of the cap that covers the breech end of the barrel. Fig. 8 is 35 a bottom plan of the muzzle end of the barrel, showing the manner of securing the magazine to place; and Figs. 9 and 10 are respectively a side and an end view of the transfer-slide.

Similar letters refer to similar parts throughout the several views.

We construct our gun with an outer barrel or tube A, having the two sections a and a'' , and an inner barrel or tube a' , through which the shot is forced.

Our actuating mechanism consists of the 45 lever F, pivoted to the stock B at f and having an upwardly-projecting arm F' , provided at its upper end with a hook f'' , which engages one end of the rod E, the opposite end of 50 which rod E passes through the end c'' of the piston, through which the rod slides freely,

so that the lever and rod may be thrown back to normal position after the piston has been carried back and is held in engagement by the sear G and a spring D back of the piston, 55 so arranged that its rebound will throw the piston forcibly toward the end of the section a of the gun-barrel. At the back end of the section a'' of the barrel we place a thimble A' in position to support the rebound of the 60 spring D, and through the center of this we make a slot b' for the passage and free action of the rod E. The sear G is actuated to throw it in engagement with the piston by the spring T and to throw it out of engagement there- 65 with by the trigger H.

b is the back sight of the gun, which is formed by cutting into and turning up a portion of the rim of the thimble A' .

We attach below the barrel a magazine N, 70 by means of the bands n and n' , in position to store the shot Q. We then place a transfer-slide K upon the tube a' (shown partially in section in Fig. 3) in position to receive the shot from the magazine in the port P, so that 75 but one shot can enter, when the transfer may be slid along until the port registers with the aperture P' in the tube, so that the projectile can drop through into the tube. This slide is actuated to hold it to normal position, so that the port registers with the apertures in the magazine, and the aperture P' in the inner tube is covered by the body of the slide, so that air cannot escape, by the 80 spiral spring M, and to draw it back, so that the port registers with the apertures in the inner tube, by the spring-catch L, which is secured at one end to the arm k , which projects downward from the slide K, and is provided at the other end with a catch l , that 85 passes through the slot l' in the tube a'' , where the end c'' of the piston in its backward motion engages it and draws it back to the position of its dotted lines in Fig. 2, in which position the port P registers with and drops the 95 projectile into the aperture P' in the tube, and the catch is carried down by contact with the surface of the tube a'' and is disengaged from the piston-head and the slide K is drawn back to normal position by the rebound of 100 the spring M.

The magazine N is loosely slid into the

thimbles n and n' and is held so that it cannot revolve by the catch o^3 engaging a notch in the thimble n' and in position longitudinally by the rim of the cap O , which is cut away at one side, as at o , so that it will slide along the end of the gun barrel or tube a to the notch o' , when the cap passes over the end of the magazine and is turned until the rim enters the notch o' , as indicated in Fig. 4.

10 B' indicates the mortise, in which the arm F' of the lever F works for actuating the piston.

It will be noticed that we have made no provision for forcing the projectiles to the transfer-slide and inner tube of the barrel.

15 We save this expense by turning the gun bottom up, with the muzzle elevated, as indicated in Fig. 3, to operate the lever F for drawing the piston back, in which position the projectiles will roll into the port in the transfer-slide, and the manipulation of the lever will draw it to position to deposit the projectile into the tube, when it will return to normal position. The port is constructed to receive but one projectile at a time, so that by
25 this means we have provided to transfer the projectile without the use of springs or additional mechanism in or about the magazine and with no exertion on the part of the operator except that necessary to manipulate
30 the lever F .

If desired, the catch l may be dispensed with and the slide manipulated by the hand pulling directly upon the arm k , or the gun may be used as a muzzle-loader by simply
35 allowing the slide to stand in its normal position when it covers the apertures P' in the inner tube, as hereinbefore stated, so that the air cannot escape therethrough sufficiently to materially lessen its effect upon the projectile, thus greatly lessening the cost of a magazine-gun without deteriorating its efficiency.

40 The barrel is secured to the stock by the key J' passing through the slot in the plate J , so that all that is necessary to assemble the stock and barrel is to hook the actuating-rod F upon the hook f' on the arm F' of the lever, throw it over to position, and insert the key, and the disassembling of the parts is accomplished by the simple removal of the key.

50 Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with a stock, barrel and actuating mechanism of a spring-actuated
55 air-gun, of a piston having two heads, connected by bars, a rod slidingly secured in the back head and connecting it with the actuating-lever, a magazine secured beneath the

barrel and having an aperture through one side in position to register with a corresponding aperture in the outer tube of the barrel, the inner tube of the barrel provided with a like aperture for the passage of the projectile, a transfer-block slidingly attached around the inner tube, within the outer tube, covering the aperture in the inner tube and having a port to register with the aperture in the outer tube when in normal position, a spring for holding it to normal position, an arm projecting therefrom, and a spring-catch projecting back from said arm to engage the head of the piston to draw the block back so that its port will register with the aperture in the inner tube and close the aperture in the outer tube, substantially as and for the purpose set forth.

2. The combination with the barrel, stock and actuating mechanism of a spring-actuated air-gun, of a magazine beneath the barrel having an aperture to register with a corresponding aperture through the outer tube of the barrel, a sliding block within the outer tube of the barrel having a port to register, when in normal position, with said aperture, a spring to hold said block to normal position, an inner tube having an aperture that is covered by said block when in normal position and is opened by the port when the block is thrown back to proper position therefor, a spring-catch to engage the piston to actuate the block, substantially as and for the purpose set forth.

3. The combination in a spring-actuated air-gun, of the barrel, stock and actuating mechanism, a detachable magazine beneath the barrel, a cap on the end of said magazine, a projecting rim on said cap with one side cut away, said rim adapted to engage a notch in the barrel to hold the magazine to place, and said magazine having an aperture arranged to register with a port in a sliding block, said block arranged to have its port register alternately with said aperture in the magazine, and with an aperture in the inner tube of the barrel, a spring for holding said block to normal position, and a catch to draw it to position to register with the aperture in the inner tube, substantially as and for the purpose set forth.

Signed at Grand Rapids, Michigan, this 5th day of February, 1898.

WILLIAM H. CALKINS.
CHARLIE A. LINDBERG.

Witnesses:

AUSTIN KENT WHEELER,
ITHIEL J. CILLEY.