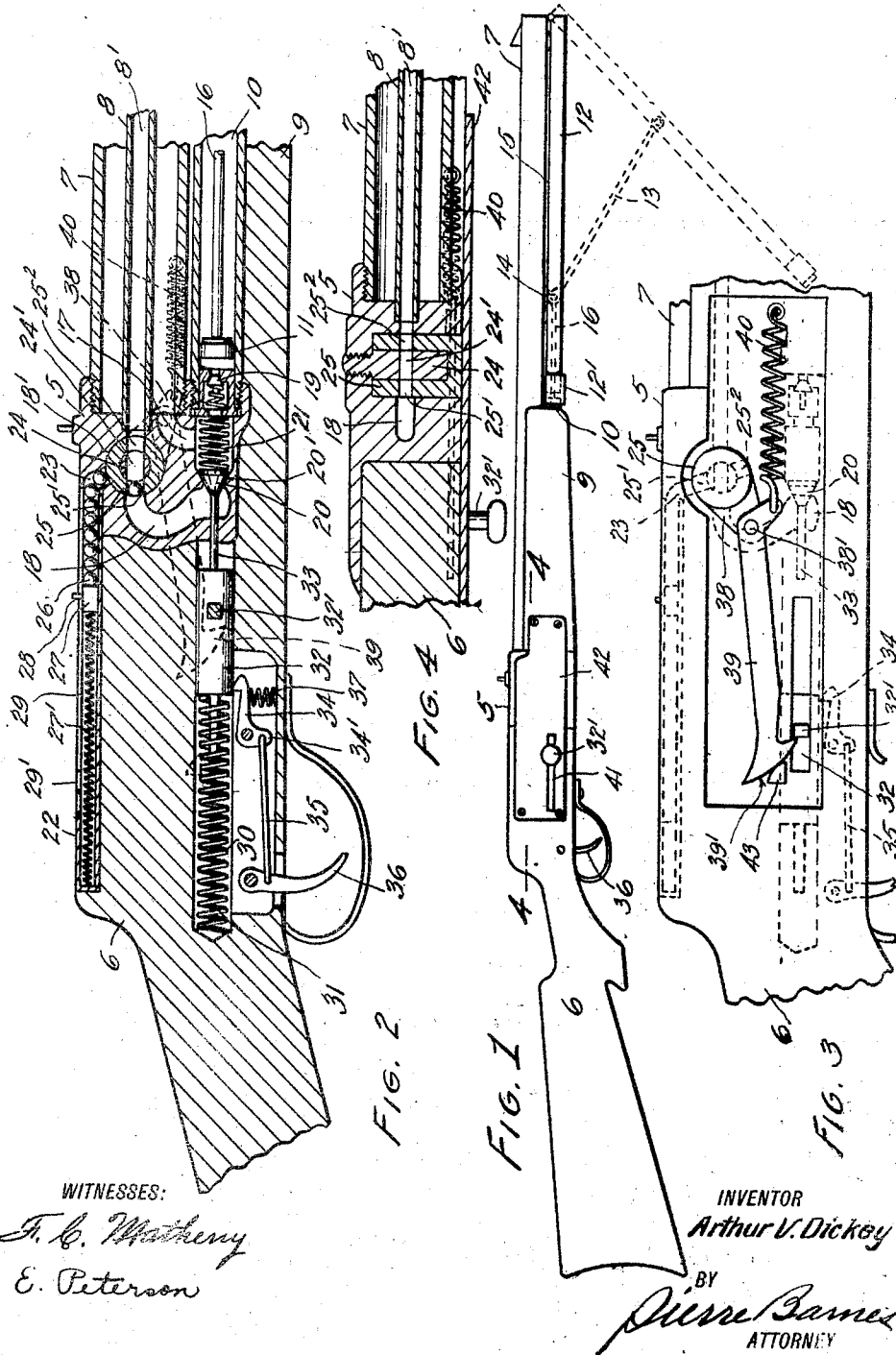


A. V. DICKEY.
AIR GUN.
APPLICATION FILED OCT. 28, 1912.

1,078,487.

Patented Nov. 11, 1913.



UNITED STATES PATENT OFFICE.

ARTHUR V. DICKEY, OF SEATTLE, WASHINGTON, ASSIGNOR OF ONE-HALF TO WILLIAM M. SHEFFIELD, OF SEATTLE, WASHINGTON.

AIR-GUN.

1,078,487.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR V. DICKEY, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Air-Guns, of which the following is a specification.

This invention relates to air-guns and, more especially, to improvements in the gun of this class which is illustrated and described in United States Patent No. 1,026,303, issued to me May 14, 1912.

The object of my improvements is to provide an extremely efficient and conveniently operated air-gun which will embody relatively few and compactly arranged parts and be capable of withstanding severe usage with little liability of getting out of order.

With these ends in view, the invention consists in the improved construction, adaptation and combination of parts, which will be described hereinafter, and pointed out more particularly in the appended claims.

In the drawings, Figure 1 is a side elevation of a gun constructed in accordance with the present invention. Fig. 2 is a vertical longitudinal sectional view thereof. Fig. 3 is a fragmentary side elevation with the cover plate removed. Fig. 4 is a detail horizontal section through 4-4 of Fig. 1.

The reference numeral 5 designates the frame of the gun which is rigidly connected to the stock 6. Secured to the stock is a longitudinally arranged cylindrical tube 7 which serves as a reservoir for compressed air, and extending through the tube 7 is the gun barrel 8.

9 is the fore-arm incasing a pump cylinder 10 which is provided with a plunger 11. The latter is operated by means of a lever 12 which is hingedly connected to the front end of the tube 7 and is connected by a link 13 to a block 14 which is slidable upon a guide-bar 15, the block in turn being connected to the plunger by a piston rod 16. When the lever 12 is unemployed, it is secured in juxtaposition with the tube 7 by means of a collar 12¹ which is moved endwise upon the pump cylinder to couple the end of said lever thereto, as represented in Fig. 1.

17 represents a passage leading from the rear, or discharge end of the pump to the interior of the air reservoir 7, and 18 is a duct extending from said passage to the

rear of the gun barrel. Provided in the pump cylinder is a spring-pressed valve 19 which serves to prevent the reverse flow of air from the passage 17 into the pump cylinder.

A valve 20, which is yieldingly held by a spring 21 in closed position against a seat 20¹, is provided at the juncture of the passage 17 and duct 18.

Provided in the stock 6 and to the rear of the gun barrel is a bullet magazine comprising a tube 22 having an open front end which is connected by a way 23 with a cylindrical chamber 18¹ extending transversely through the air duct 18.

The axis of the chamber 18¹ is disposed in the same plane with the axis of the gun barrel. Provided centrally of said chamber is a non-rotatable cylindrical core or plug 24 formed with a bore 24¹ extending diametrically therethrough and in coincidence with the bore of the barrel. Rotatably mounted upon the core 24 and fitting the peripheral wall of said chamber is a sleeve 25 provided with holes 25¹ and 25² disposed diametrically opposite each other and are arranged to be brought into axial alignment with the barrel bore 8¹ and the core bore 24¹ when the sleeve is in its normal rotary position, as shown in Fig. 2. When the sleeve is moved into the rotary position in which it is indicated by broken lines in Fig. 3, the hole 25¹ is presented to the way 23 to receive a projectile from the magazine.

The bullets, indicated by 26, within the magazine are pushed forward through the way 23 into feeding positions with respect to the sleeve by means of a follower 27 which is urged forward by a helical spring 27¹. A stud 28 secured to said follower protrudes through a slot 29 provided in the magazine wall and is utilized for retracting the follower in opposition to spring 27¹ when the magazine is to be supplied with bullets through an aperture 29¹ provided therefor in the wall of the magazine.

To the rear of the valve 20 is a chamber 30 containing the main spring 31 tending to press a hammer-block 32 forwardly to encounter a firing pin 33 which, in turn, is driven by the spring-impelled block 32 against the valve 20 to unseat the same when the block is released. When the hammer-block 32 is brought, through the agency of a stud 32¹, to its rearmost position, it is en-

gaged by a detent 34 which is in the nature of a bell-crank lever having a depending arm 34¹ which is connected by a pull-rod 35 with the trigger 36. The engagement of said
 5 detent with the hammer-block is effected by a spring 37.

Provided on the sleeve 25 is an arm 38 which is connected by a pin 38¹ to a dog 39 which is connected at its forward end with
 10 an extensible spring 40 tending to yieldingly retain the sleeve in the position in which it is shown in Fig. 2. This dog is of a length to have its forward hooked end engage the stud 32¹ which is rigidly connected to the
 15 hammer-block and protrudes through a longitudinal slot 41 provided in the plate 42 secured to the side of the gun.

43 is a fixed pin disposed so as to be encountered by the inclined face 39¹ of the
 20 dog to ward off the latter from the stud 32¹ as the hammer-block (see Fig. 3) approaches the position in which it is engaged by the detent 34. When the dog 39 is, through the medium of the stud 32¹, drawn rearwardly,
 25 the sleeve 25¹ is presented to the way 23 to receive a bullet, and upon being released, the spring 40 asserts its power to restore the sleeve 25 to normal position (Fig. 2) with the bullet in firing position. The connection
 30 between the spring 40 and the dog 39 is offset to be below the longitudinal axis of the latter in order that the spring will exert a downward pressure at the hooked end of the dog.

To fire the gun, the trigger is pulled, thereby withdrawing the detent 34 from the hammer-block 32, whereupon the main
 35 spring 31 becomes operative to drive the hammer-block against the firing pin 33 which is thereby caused to push the valve 20 into open position for the admission of a quantity of compressed air into the duct 18 to act against the bullet and deliver same from the gun.

45 What I claim is—

1. In an air-gun, the combination of a rotary bullet-feeding element arranged to carry a bullet from the magazine to the rear
 50 end of the gun barrel, a hammer block and connections with the feeding element movable longitudinally of the gun for effecting the rotary movement of said element into bullet-receiving position, and a spring for rotating the element into position for dis-
 55 charging the bullet.

2. In an air-gun, the combination of a hammer-block, a main spring therefor, a rotary bullet-feeding element, a spring tend-
 60 ing to rotate said element for carrying a bullet from the magazine to the rear end of the gun barrel, and means for effecting the rotary movement of said element into bullet-receiving position and likewise serving to move the hammer-block in opposition to said
 65 main spring.

3. In an air-gun, the combination of a rotary bullet feed element provided with an aperture in which a bullet is conveyed from the magazine to the rear of the barrel, a
 70 spring operatively connected to said element, a spring-pressed valve, a spring-pressed hammer-block for actuating said valve, a de-
 75 tent, means for moving said block into position to be engaged by said detent and also serving in coöperation with said spring to operate the aforesaid bullet feed element, and trigger actuated means for releasing
 said detent from the hammer-block.

4. In an air-gun, the combination of a rotary bullet feed element, a spring pressed
 80 valve, a spring-pressed hammer-block, a detent, means for moving said block into position to be engaged by said detent and also serving to rotate the aforesaid element into
 85 position to receive a bullet from the magazine, a spring for actuating said element to convey the bullet into firing position, and means for releasing said detent from the
 hammer-block whereby a quantity of air is supplied to the rear of the bullet for dis-
 90 charging the same.

5. In an air-gun, the combination with the magazine and the barrel, of a non-rotatable
 95 plug having an opening disposed in alignment with the barrel-bore, a sleeve mounted for rotary movement on said plug and provided with apertures disposed at diametri-
 cally opposite sides thereof, one of said apertures serving as a receptacle in which a
 100 bullet is conveyed from the magazine into firing position, and a hammer block and connections with the sleeve for effecting movement of the latter into bullet receiving
 position.

6. An air-gun, having an air reservoir, a
 105 barrel extending therethrough, an air-pump disposed subjacent to the reservoir and communicating therewith, a duct for the delivery of compressed air from said reservoir
 110 to the rear of the barrel, a spring-pressed valve for said duct, a spring-pressed hammer-block for opening said valve, a manually operated means for carrying said ham-
 115 mer-block into operative position, a magazine located to the rear of said barrel, a rotary feeding device for conveying the projectiles from the magazine into position
 to be fired through the barrel, and a spring operatively connected to said feeding device
 120 and coöperating with said manually operated means for operating the feeding device.

7. In an air-gun, the combination with an air-reservoir, a gun barrel extending there-
 125 through, a duct from said reservoir to the rear of the barrel, a spring-closed valve for said duct, a hammer-block, a main spring for actuating said hammer-block, a maga-
 130 zine, a rotary bullet-feeding device, a spring for actuating said device for conveying the

bullets from said magazine to the rear end of said barrel, means for retracting the hammer-block in opposition to said main spring and also serving to move said feeding device into position to receive a bullet from the magazine, a detent for securing said hammer-block when brought to its rearmost position, and a trigger operatively connected to said detent for releasing the same from the hammer-block.

8. In an air-gun, the combination with a rotary bullet-feeding element having an aperture to accommodate a bullet, manually actuated means comprising a hammer block and connections with the feeding element both movable longitudinally of the gun for rotating said element into position to receive a bullet from the magazine, and a spring for rotating said element into position for discharging the bullet when the element is released from the aforesaid means.

9. In an air-gun, the combination of a rotary bullet-feeding element, a spring closed valve for regulating the supply of

compressed air to discharge a bullet through the barrel, a hammer-block, a spring acting to drive the hammer-block for opening said valve, a detent for retaining the hammer-block in operative position, a stud provided on the hammer-block, a dog operatively connected with said element and engageable with said stud whereby said element is brought into position to receive a bullet from the magazine when the hammer-block is being moved into operative position, means serving to disengage said dog from the stud when the hammer-block approaches the end of its movement into operative position, a spring for restoring said element into normal position upon the disengagement of said dog, and a trigger for disengaging said detent from the hammer-block.

Signed at Seattle, Wash., this 10th day of October, 1912.

ARTHUR V. DICKEY.

Witnesses:

PIERRE BARNES,
E. PETERSON.