

(No Model.)

J. B. THACHER & E. C. FASOLDT.
AIR GUN.

No. 504,820.

Patented Sept. 12, 1893.

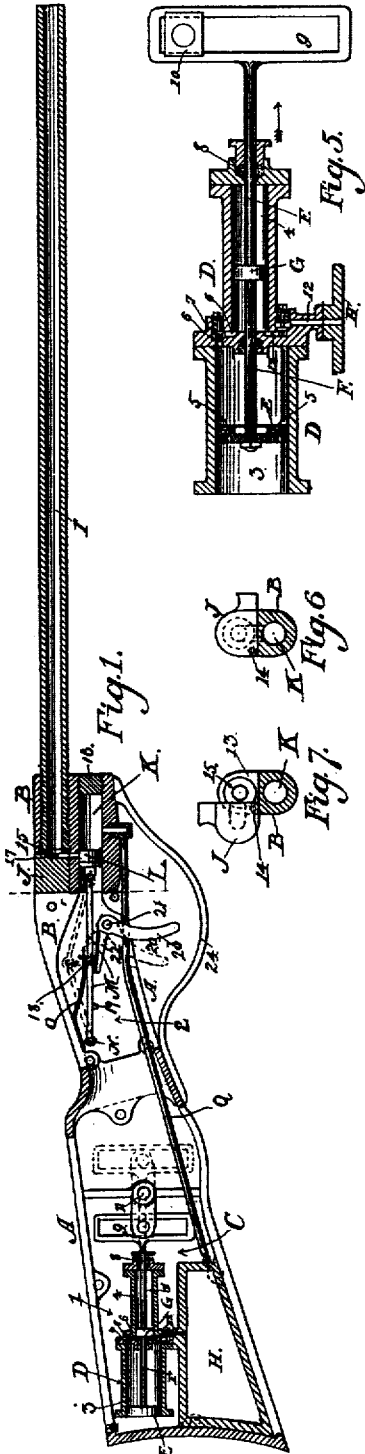


Fig. 1.

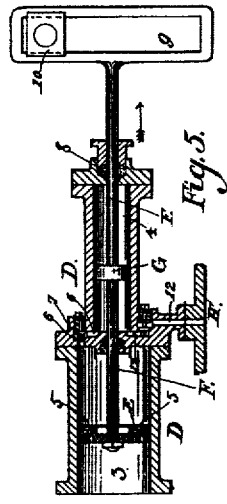


Fig. 5.

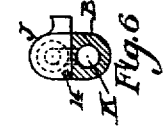


Fig. 6.

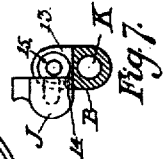


Fig. 7.

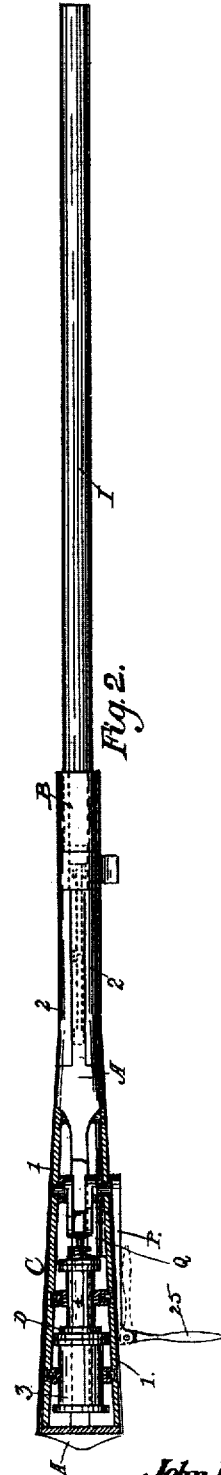


Fig. 2.

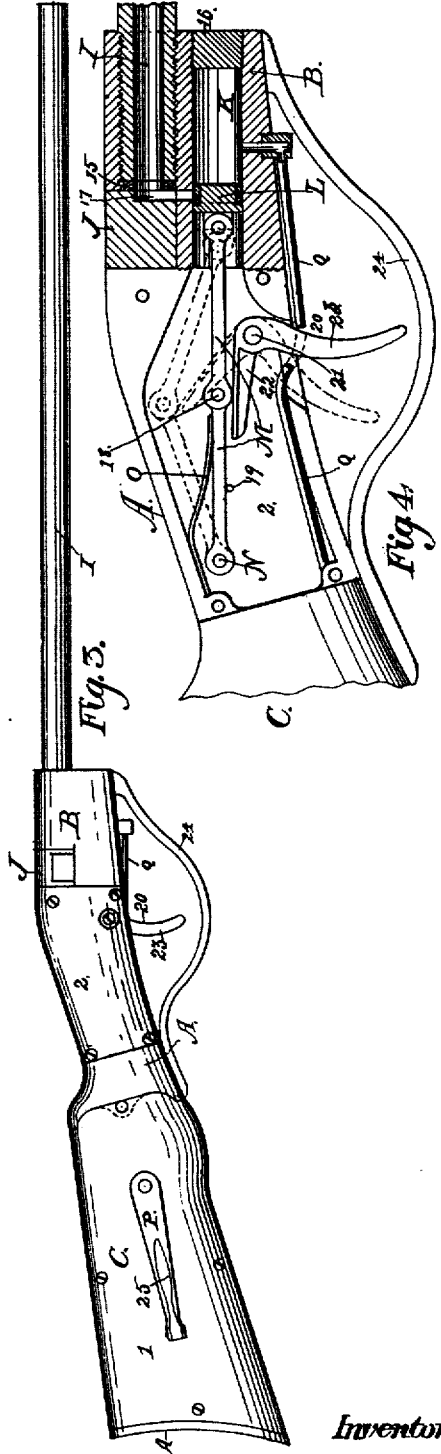


Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN BOYD THACHER AND ERNEST C. FASOLDT, OF ALBANY, NEW YORK.

AIR-GUN.

SPECIFICATION forming part of Letters Patent No. 504,820, dated September 12, 1893.

Application filed March 23, 1893. Serial No. 467,292. (No model.)

To all whom it may concern:

Be it known that we, JOHN BOYD THACHER and ERNEST C. FASOLDT, both of the city and county of Albany, in the State of New York, have invented new and useful Improvements in Air-Guns, of which the following is a specification.

Our invention relates to improvements in weapons for discharging bullets or other missiles by means of compressed air; and the object of our improvements is to render the weapon more effective in its operation. We attain this object by the mechanism illustrated in the accompanying drawings which are herein referred to and form part of this specification.

In said drawings Figure 1 is a longitudinal section of our air-gun. Fig. 2 is a plan view of the same with portions of the stock of the gun broken out to expose concealed parts. Fig. 3 is a side elevation of our air-gun. Fig. 4 is an enlarged longitudinal section of the part of our air-gun adjacently to the breech of the gun barrel, showing the air-valve and the mechanism for operating the same. Fig. 5 is an enlarged and detached longitudinal section of the air-compressing mechanism; and Figs. 6 and 7 are transverse sections of the breech-piece, the first showing the breech-block in position to close the breech end of the bore of the barrel, and the second showing said breech-block in position to open said bore.

As represented in the drawings, A designates the stock of our air-gun, said stock being a metallic frame of which the breech-piece B may form an integral part, or it may be made separately and attached thereto; said stock is usually made in the form of an open frame which is hollow from the butt C to the inner end of the breech-piece B, the open sides of said stock being closed by panels, 1 and 2, for affording access to the mechanism contained in said stock and for excluding dust and grit from said mechanism.

D designates an air-compressing pump which is substantially described and shown in Letters Patent No. 464,223, granted to the said Ernest C. Fasoldt on the 1st day of December, 1891, the same consisting of a primary air-compressing pump, 3, and a secondary pump, 4, arranged to receive the com-

pressed air from the primary pump and effect a secondary compression of said air; crank-shaft, 11, is journaled in the frame of the stock A, and its crank-pin is fitted to pass through the opening of the sliding-block 10, so that the rotatory motion of said crank-shaft will impart a reciprocating movement to the piston-rod F for the purpose of effecting a compression of air in said pump. A valved-outlet passage, 12, leads from the air compressing pump into a compressed-air receiver, H, formed in the stock A.

I designates the barrel of the gun, which is screwed, or otherwise secured in the breech-piece B; transversely through the latter, at the inner terminal of the barrel I, a recess, 13, is formed, and to fill said recess a breech-block, J, is hinged, as at 14, so that said breech-block can be swung sidewise for the purpose of opening the inner end of the bore of the barrel I to insert a bullet, or other missiles, into the breech of the barrel. For the purpose of forming an air-tight joint between the breech of the barrel I and the adjoining face of the breech-block J, a gasket, 15, of soft metal, or other suitable material is inserted in the breech-piece B. In the latter directly underneath the breech of the barrel I, a longitudinal chamber, K, is bored to receive a piston or valve, L, which should form an air-tight joint with the bore of said chamber, and for the purpose of effecting such a joint, we preferably use the metallic packing for which Letters Patent No. 441,866 were granted to the aforesaid Ernest C. Fasoldt on the 2d day of December, 1890. The outer end of the chamber K is closed by a screw-plug, 16, or other suitable means for forming a hermetical closure at that point. Leading from the chamber K, a passage, 17, is formed to convey the compressed air into the breech of the barrel I, and said passage is opened and closed—as occasion may require—by means of the piston L which is fitted to slide over, and away from, the end of said passage that opens from the chamber K. A toggle-joint, M, has one of its ends connected to the piston L, and its opposite end is connected to stationary pivot, N, secured to the stock A; said toggle-joint is provided with a joint-pin, 18, at or near the center of the toggle-joint, and a spring, O, is arranged to exert its pressure to force the

parts of said toggle-joint into a direct line, so as to force the piston L into a position where it will close the passage 17. A stop-pin, 19, is arranged to prevent the toggle-joint from being forced below a direct line. A trigger, 20, is pivoted, as at 21, to the stock A and has an arm, 22, arranged to bear against the under side of the toggle-joint M, so as to deflect the latter from its direct line, as indicated by dotted lines in Fig. 4. A finger-arm, 23, extends downward from the stock A and affords the means for operating the toggle-arm from the exterior of the stock A. A guard, 24, is arranged to protect the finger-arm from accidental contact with anything that might throw the toggle-joint out of line and thereby effect a premature discharge of the air-gun.

P designates a crank which is attached to an end of the shaft 11 for the purpose of affording the means for operating the air-compressing pumps from the exterior of the stock; said crank is preferably provided with a handle, 25, that is jointed thereto so as to fold, as indicated by dotted lines in Fig. 2, against the outer face of said crank, and thereby the danger of said handle catching against any obstructive article will be avoided.

Q designates an air-pipe which connects the compressed-air receiver H with the chamber K for the purpose of conveying the compressed-air from said receiver to the chamber K and thence into the barrel I through the passage 17, whenever said passage is open.

Our invention is operated in the following manner: By means of the air-compressing pump D air is forced into the receiver H until the required pressure is obtained in said receiver; the breech-block J is then swung from the recess 13 to afford access to the bore of the inner end of the barrel I so as to insert a bullet therein. The breech-block J is then restored to its place in the recess 13, leaving the air-gun in condition to effect the discharge of the bullet from the barrel I; when this has been accomplished the finger-arm 23 is drawn back toward the butt C, thereby throwing the arm 22 upwardly to push the joint-pin 18 out of the direct line shown by the full lines in Fig. 4. By this the piston E is moved to uncover the passage 17 and allows the compressed air from the receiver H to enter the bore of the barrel I and forcibly eject the bullet from said barrel. The air-gun is then in condition for a repetition of the operation just described. By means of the compound air-compressing pump D, as herein shown and described, we are enabled to obtain a high degree of compression of the

air in a very short space of time, and, as will be found on inspection of the drawings, the air-compressing mechanism occupies but little space in our gun, and the means for controlling the discharge of the compressed-air are both simple and effective.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In an air-gun, the combination of a gun-stock provided with a gun-barrel, an air-compressing pump contained in said stock, a crank-shaft for operating said pump and having one of its ends protruding from the side of said stock, an operating-crank fixed on the protruding end of said shaft and having a handle jointed thereto; said handle being arranged to fold against the face of said crank, a compressed-air receiver contained in the gun-stock, an air-chamber formed in the breech-piece and having its foremost end hermetically stoppered, a passage communicating between said air-chamber and the bore of the gun-barrel, an air-passage leading from the air-receiver to the air-chamber, and a piston fitted to reciprocate in said air-chamber and arranged to govern the flow of air from the air-chamber into the gun-barrel, as and for the purpose herein specified.

2. The combination of a gun-stock provided with a gun-barrel, an air-compressing pump contained in said gun-stock and arranged to deliver compressed-air into a receiver contained in said gun-stock, an air-chamber formed in the breech-piece for said gun-barrel, a stopper which forms a hermetical closure for the foremost end of said air-chamber, a passage communicating from said air-chamber with the bore of the gun-barrel, an air-pipe leading from said receiver into said air-chamber, a piston fitted to move in the bore of said air-chamber and to close the passage leading from said air-chamber into said gun-barrel, a toggle-joint having one end jointed to said piston and its opposite end jointed to a stationary point of the gun-stock, a spring arranged to extend said toggle-joint to the extreme length of the latter, and a trigger arranged to deflect said toggle-joint; whereby said piston can be moved to admit the compressed-air from said receiver into the bore of the gun-barrel, as and for the purpose herein specified.

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