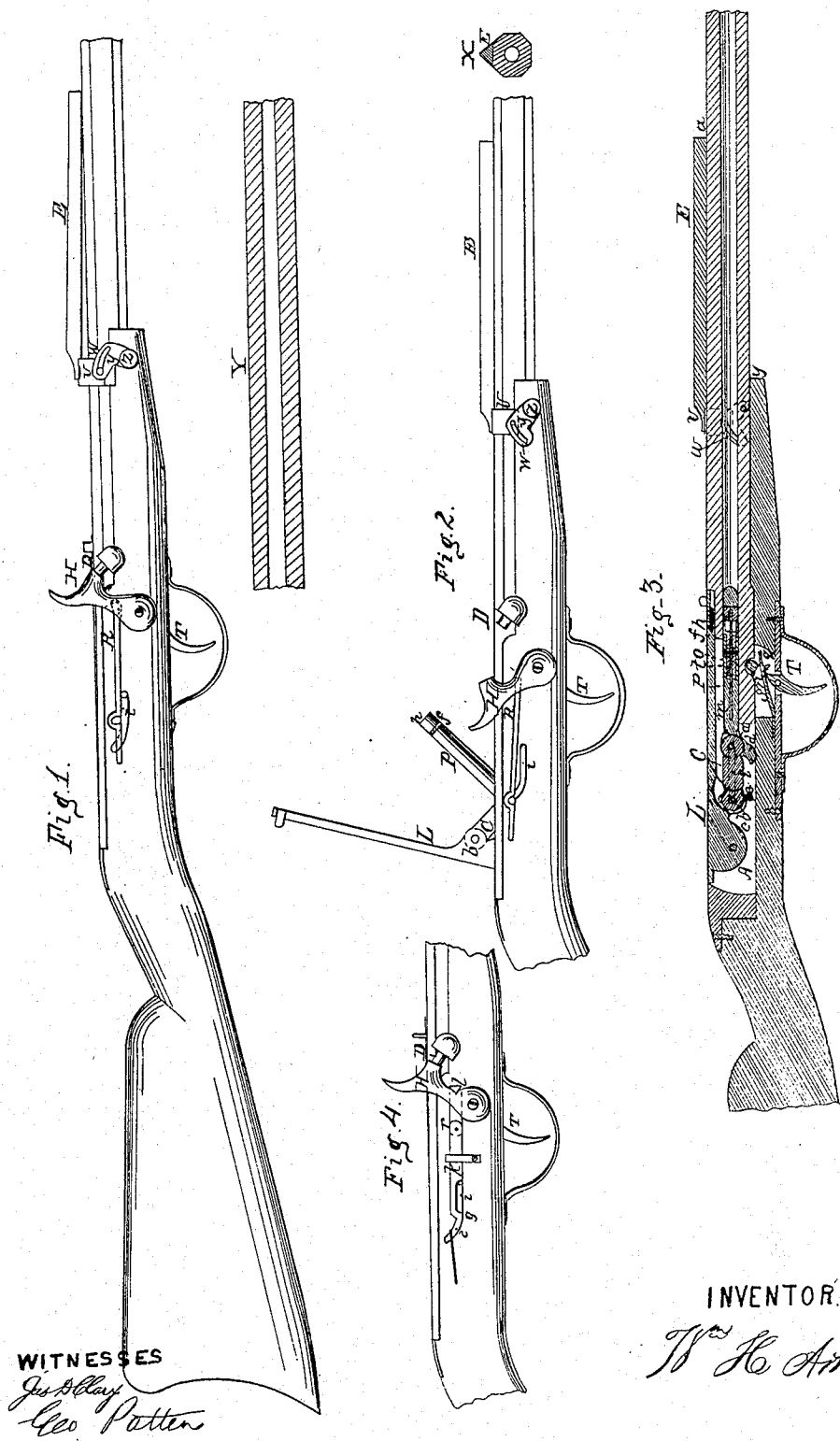


W. H. ARNOLD.  
Breech-Loading Fire-Arm.

No. 26,076.

Patented Nov. 15, 1859.



WITNESSES

*Geo. Allen*  
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# UNITED STATES PATENT OFFICE.

WM. H. ARNOLD, OF WASHINGTON CITY, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 26,076, dated November 15, 1859.

*To all whom it may concern:*

Be it known that I, W. H. ARNOLD, of Washington city, in the county of Washington and District of Columbia, have invented a new and useful Improvement in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, forming part of this specification, in the several figures of which similar characters of reference denote the same part.

Figure 1 is a side view of the fire-arm. Fig. 2 is a similar view showing piston elevated for loading. Fig. 3 is a longitudinal section taken perpendicular to upper surface of barrel. Fig. 4 is a side view showing cocking device.

This fire-arm is designed to be used with my tail-guide projectile, the construction and operation being as follows: The loading portion of the arm consists of a breech-piston, P, connected by pins *a* and *b* and shackle-piece C with the cap-lever L, which moves about pin *c*. The piston has a tail-piece, *d*, which, when lever L is raised, comes in contact with a pin, *e*, extending across chamber A, and causes the piston to assume the position shown in Fig. 2, the pin *a* moving in grooves *i*. The piston P has a cavity, *m*, to receive the tail-piece of the projectile which passes through the cartridge, as shown in Fig. 3. Its head *h* is separate from the main body of the piston, there being an elastic packing, *f*, between them, so that the head may have a slight rearward motion at the moment of discharge. The head *h* is made with a chamber to receive the portion of the cartridge containing the charge of powder, so that the ignition of the charge will take place in the elastic chamber. The head may, however, be made flat at its extremity, and the base of the cartridge rest against it after the tail-guide *t* has passed into its cavity, if it be so desired. After elevating the piston by lifting lever L, the charge is placed upon it by inserting the tail-guide *t* in cavity *m*, allowing the cartridge to rest upon the head of the piston. Lever L is then forced down, carrying the piston into a line with the bore of the piece, and forcing it forward therein, so that the several parts will

have the positions shown in Fig. 3. In elevating the lever L, pin *a* encounters the portion *g* of slide *k*, whose projecting end *l* is in front of the hammer H. This cocks the piece as the piston is elevated for loading. As cap-lever L is shut down, pin *a* encounters the forward portion of the notch in the slide *k*, and forces it forward to its original position, leaving the hammer elevated, ready for firing. When cocked, the stud *n* on tumbler *o* is caught by projection *g* on spring *s*. The drawing down of this spring by trigger T causes the hammer to descend and explode the cap on cone D. The slide *k* is jointed at *r*, so that the rear portion may be elevated out of reach of pin *a*, if it be desired to load without cocking the piece.

A modification of this cocking device is seen in Figs. 1 and 2, the notched rod R being attached to the hammer. In practice this slide *k* and parts connected therewith are designed to be covered.

The sight E consists of a long piece with a cross-section (shown at X) attached at its front extremity, as shown at *u*, and provided in rear with two branches, *v*, passing around the barrel, and having pins which enter slots *w* of elevating-pieces *y*. These pieces are secured to a shaft whose head is seen at *z*, the slot being eccentric to the shaft. By turning the head *z* the rear portion of the sight will be moved. There will be a graduated scale for the giving of the proper elevation for different ranges. The aim is taken by passing the sight along the fine straight-edge constituting the top of the sight. This construction enables the operator to take aim far more quickly than with the sights now in use, as the eye can draw the line far more readily than with ordinary sights. The bore of the piece has a slight contraction from the base to a distance of about four inches, this contraction being about four one-hundredths of an inch. From this point the bore is formed as in guns of ordinary construction. This is designed to offer a resistance to the ball, so that it may not pass out at the first impulse, but be discharged after the powder has been fully ignited. This retardation will of course be very slight; but as the ignition of the charge is to a certain extent progressive, it will, nevertheless, pass out with

greater velocity than if moved from the bore by the first impulse. The contraction is shown in an exaggerated manner at Y.

Having described my invention, I claim and desire to secure by Letters Patent—

1. The combination of cap-lever L, shackle-piece C, pin *e*, and grooves *i* with the breech-piston P, for operating the same, substantially as described.

2. The combination of slide-piece *k*, jointed as described, with the pin *a* and hammer H,

operating substantially as and for the purpose set forth.

3. The cavity *m* in the piston P, for the reception of the rear projecting tail-piece of the projectile, as set forth.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

WM. H. ARNOLD.

Witnesses:

JOHN S. HOLLINGSHEAD,  
JAS. D. CLARY.