

UNITED STATES PATENT OFFICE.

J. DURELL GREENE, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 18,634, dated November 17, 1857.

To all whom it may concern:

Be it known that I, J. DURELL GREENE, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Breech-Loading Fire-Arms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a transverse section upon the line *xx* of Fig. 1. Figs. 3, 4, and 5, longitudinal sections that will be referred to hereinafter.

The gun which forms the subject of my present invention was designed to be used in connection with an improved cartridge invented by me, in which the ball is placed to the rear of the powder, and a wad behind the ball.

To enable others to understand my invention, I will proceed to describe its nature and the manner in which I have carried it out.

In the said drawings, the barrel *A* is extended back to form a loading-chamber, *T*, into which there is an opening, *G*, for the insertion of the cartridge. Through the rear of the chamber *T* passes a revolving sliding plunger, *C*, and through the center of this plunger a rod, *D*, which carries at its forward end a breech-plug, *E*, and at its rear end a button, *F*. The plunger *C* is also furnished with a ball or button, *I*, by which it is manipulated, and carries two projecting ears, *d*, which, when the plunger is in the position seen in Fig. 1, 2, 4, and 5, enter recesses *e* in the wall of the chamber *T* and rest against the shoulders *r*, by which the plunger and the parts immediately connected therewith are held immovable. When the plunger is revolved ninety degrees, the ears *d* clear the shoulders *r*, and the plunger may be drawn back at the base of the barrel. At a point immediately in advance of the forward end of the breech-plug *E*, a groove, *i*, is turned, Figs. 3, 4, and 5, into which the wad is forced by the discharge of the powder. The wad is thus caused to lie directly over the joint around the breech-plug, by which the latter is more perfectly packed than would be the case were the walls of the chamber straight, with no method of breaking the joint.

That the piece may never be discharged except when the plunger is forced forward, and also so revolved as to engage the ears *d* with the

shoulders *r*, the following device is employed. When the parts are in this position, a bolt, *c*, attached to a spring, *p*, enters a hole, *m*, in the plunger, Fig. 4, and permits a stop, *y*, attached to the spring to move out of the way of the trigger. At all other times the bolt *c* rests upon the surface of the plunger, and the stop *y* is thereby thrown into the position seen in Fig. 5, so as to interfere with the movement of the trigger and prevent the discharge of the piece. The bolt *c* also prevents the revolution of the plunger *C* until such time as the former is withdrawn, which is effected in a manner which will be presently described.

The nipple is seen at *H*. The other details of the lock, forming no part of my present invention, are not shown.

Operation: Starting with the parts in the position seen in Fig. 3, a cartridge made as above described is passed through the opening *G* into the chamber, (as indicated in red.) The plunger is then thrown forward by pressure upon the knob *I*, by which the cartridge is forced into its chamber, Fig. 4. The plunger *C* is now caused to make a quarter-turn, by which the ears *d* are locked with the shoulders *r*, and the bolt *c* is thrown into the hole *m* in the plunger, by which the latter is held from turning until the bolt is again drawn out of its hole. The piece is now discharged and the ball is forced back upon the wad *z*, which is thus pressed into the groove *i* and over the joint between the breech-plug and the chamber. This joint is thus securely packed and all leakage at this point prevented. The button *F* is now forced forward, and the ball and wad, remaining behind from the discharge, are thrown forward into the barrel, Fig. 5, the button depressing the spring *p* and withdrawing the bolt *c* from the hole *m*. The plunger *C* may now be revolved back a quarter-turn to disengage the ears *d*, and this plunger may be again drawn back, as in Fig. 3. A fresh cartridge is now introduced and is forced forward against the former wad and ball, which are driven out by the next discharge.

The advantages which result from the construction above described may be recapitulated as follows: First, the ball, when forced forward by the breech-plug, as in Fig. 5, is left with its axis coincident with that of the barrel; second, the force of the discharge

causes the ball to compress the wad into the groove *i* and over the joint, by which all leakage at the point is prevented.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The groove *i*, or its equivalent, operating in connection with the wad at the rear of the cartridge, in the manner substantially as herein set forth.

2. I do not claim a sliding breech-plug secured to the barrel by ears and shoulders, as such device does not constitute my present in-

vention; but what I do claim is the sliding breech-plug *E*, in combination with the revolving plunger *C*, operating in the manner substantially as set forth.

3. The bolt *c* and stop *y*, operating in the manner set forth, to interrupt the movement of the trigger, as described.

J. DURELL GREENE.

Witnesses:

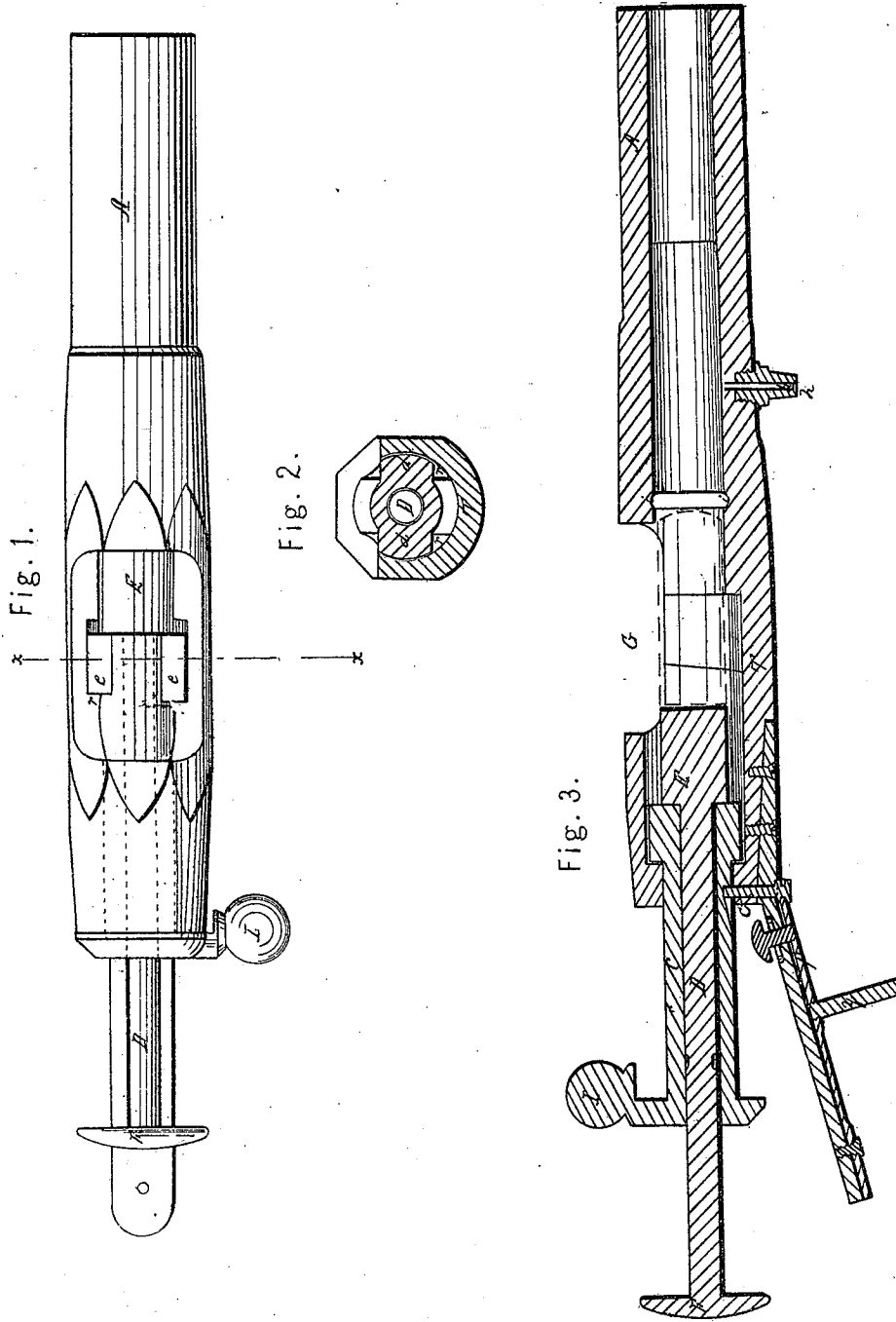
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Fig. 5.

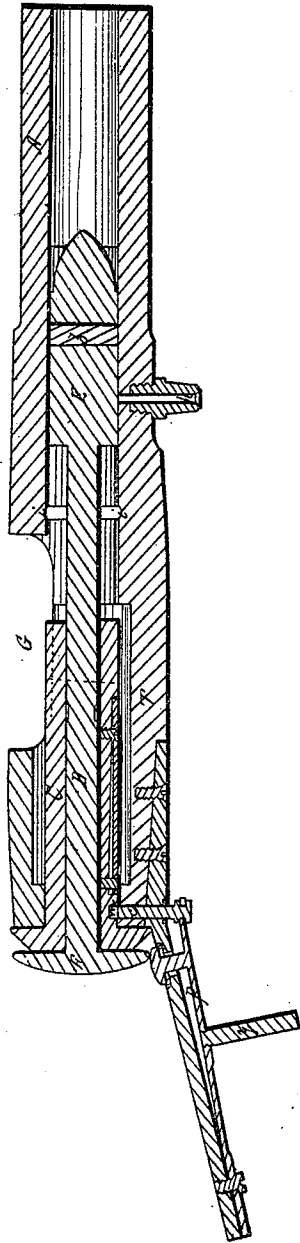


Fig. 4.

