Le R. S. WHITE.

Breech-Loading Fire-Arm.

No 37,376.

Patented Jan. 6, 1863.

Fig. 1

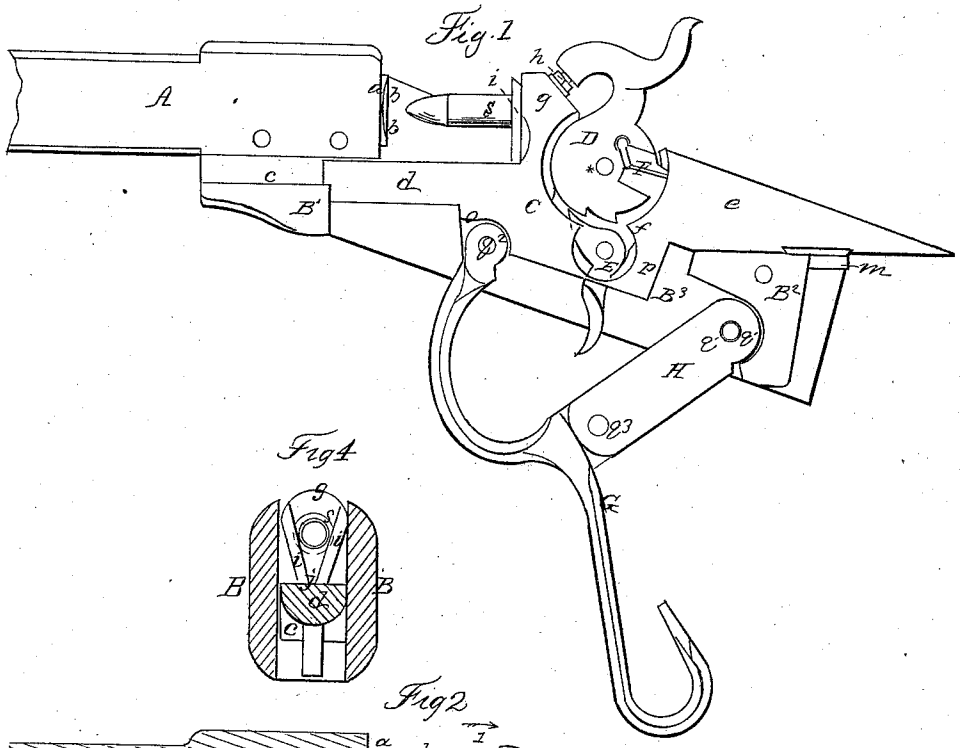


Fig 4

Fig 2

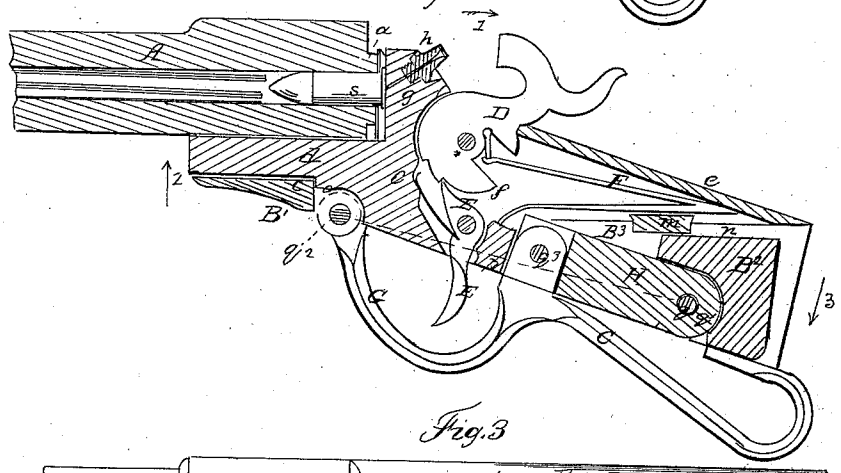
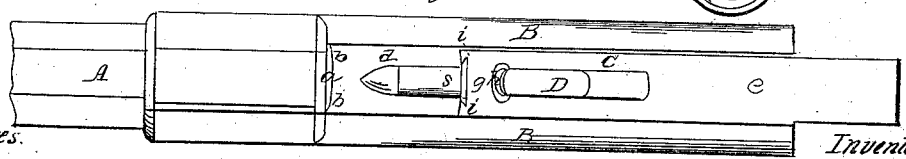


Fig. 3



Witnesses.

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UNITED STATES PATENT OFFICE.

LE ROY S. WHITE, OF WATERBURY, ASSIGNOR TO HIMSELF AND HENRY A. CHAPIN, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **37,376**, dated January 6, 1863.

To all whom it may concern:

Be it known that I, LE ROY S. WHITE, of Waterbury, in the county of New Haven and State of Connecticut, 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 accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a portion of the stock and barrel of a fire-arm with my improvements applied thereto, one of the side pieces being removed to show the sliding breech-piece and its actuating mechanism. The breech-piece is shown thrown back from the breech end of the barrel. Fig. 2 is a vertical longitudinal section of the same, the breech-piece being moved forward against the breech end of the barrel. Fig. 3 is a plan view of the invention in the condition shown in Fig. 1. Fig. 4 is a vertical transverse section of the sliding breech-piece, looking toward the butt-end of the fire-arm.

Similar letters of reference in the several figures indicate corresponding parts.

My invention consists in constructing the breech-piece with a horizontal front and rear guide, and fitting the same to horizontal ways of the stock of the fire-arm, so that by attaching a jointed guard to its forward portion and to the stock, and depressing said guard, the breech-piece, along its whole length, will draw out of the stock to a position convenient for the introduction of a flanged charged cartridge-case into a holder on its forward end, and then by drawing the guard back the breech-piece with the charged cartridge-case will move forward along the channel of the stock, and thus charge the breech end of the barrel and close it, ready for firing, in a very secure and perfect as well as expeditious manner.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the barrel of the fire-arm, bored through from end to end. On its breech end a short shoulder, *a*, is formed around the bore by reducing the diameter of the said end of the barrel. The face of this shoulder is beveled, as at *b b*, so as to form a neat joint with the forward end of the sliding breech-piece. This barrel is fitted to an oblique or inclined stock, B B′ B^2 B^3, in the manner represented, so that a semi-cylindric guide-box, *c*, shall be formed by the lower part of the breech end of the barrel, and the forward bottom portion, B′, of the stock. The vertical channel B^3 of the stock has no guides on opposite sides to support the sliding breech, but a free passage for the descent and escape of clogging matter is secured. The guides for the breech-piece, as will be presently seen, are at opposite ends of the stock.

C is a sliding breech-piece, carrying the hammer D, trigger E, and mainspring F, as represented. This breech-piece is made broad midway between its two ends *d e*, as indicated at *f*, so as to be capable of containing or supporting the parts D, E, and F. It also has a nose or projection, *g*, just forward and below the hammer, formed on it. This nose is beveled off in rear and squared off in front, the squared portion fitting the squared end of the barrel, and the beveled portion corresponding to the position and movement of the hammer. Through the nose an oblique bent passage is formed, and a screw-nipple, *h*, placed in line therewith.

On the squared portion of the nose, near the sides, two narrow cleats, *i i*, are fastened. These cleats are beveled on their inner edges and on their faces, and are set so as to form a flaring or V channel from the top to bottom of the nose or projection, as shown in Fig. 4. This channel receives the flange of the ordinary metal cartridge-case, and by its taper form holds it with a wedging action. It also, by being deep and open at *j*, allows a free descent and escape of clogging matter at all times.

Pins, and also a semicircular channel, have been used heretofore; but I consider my plan far preferable and a decided improvement, as it holds firmer and does not clog.

Below and forward of the nose or projection *g* a long semicircular tongue or guide, *d*, is formed on the breech-piece. This guide runs at right angles to the squared face of the nose or parallel with the barrel A, and has its support in the guide-box *c*. Another guide or a

tail, *e*, of wedge form is provided on the breech-piece in rear of the hammer. This tail has its upper side inclined relatively to the barrel A, but its under side is parallel or horizontal with the same. To the under side a dovetail guide-piece, *m*, is attached, said guide-piece serving to render impossible the descending and shifting of the mainspring F out of its proper position under any circumstances, and by being fitted in a dovetail groove, *n*, of the part B^2 of the stock, as shown, serves to aid the tongue *e* in guiding and supporting the breech-piece in its movements. The breech-piece at the points *o p*, where the tongue and tail strike out, has shoulders formed on it, as represented.

To the shoulder *o* a spring guard or lever, G, is hinged, as shown, and to the upper side of the rear terminus of the bow of the guard a link, H, is hinged, said link being fastened or hinged by its rear end to the socketed portion of the part B^2 of the stock, as represented. The front end of the link abuts against the shoulder *p* of the breech-piece when the parts are in the position shown in Fig. 2, and thus serves as a stay to the breech-piece when the charge is fired. The strain does not fall upon the pin *q*, but upon the portion B^2 of the stock, because the hole *q'*, in which the pin works, is made larger than the pin.

It will be observed from the drawings that the three pins $q\ q^2\ q^3$ are not on a line with one another, but that the intermediate pin stands higher when the parts are in the position shown in Fig. 2 than the outer pins. By this arrangement and the elasticity of the bow part of the lever-guard, when the guard is almost closed, it has a tendency to continue its movement, and when fully in place it will stay there without a fastening at the end of the lever-guard, the requisite spring force being derived from the bow of the guard itself, and said force being applied against the joint when its tendency is to bend upward instead of downward. This is a useful arrangement, as it saves time in manipulating the guard.

The operation of the invention is as follows: The flange of the cartridge-case S is let down into the V-channel of the breech-piece, as indicated in the drawings, Figs. 1 and 3. The lever-guard is then brought to the position shown in Fig. 2. This operation forces the breech-piece forward and the cartridge-case into the breech end of the gun-barrel, the shoulder of the barrel and the front end of the breech-piece forming a good joint, or a joint suitable for firing the closed metal cartridge-case. The trigger is now operated and the force of the hammer upon the cap of the nipple causes the charge in the case to explode. The case is retained by the cleats, and when the breech-piece is moved back it goes back with it.

At the discharge of the fire-arm the tendency of the breech-piece is to go in the direction of the arrow 1; but the link resisting it at *p* and *p*, being below the point *g*, where the recoil is received, it will tend to turn on a center near the point * in the direction of the arrows 1, 2, and 3; but this tendency to turn is resisted by the tail of the breech-piece bearing on its support at *n*, and the tongue bearing in its socket or box *c*, and at the same time the link H prevents it sliding back, except the distance of the slight room provided in the hole *q'* for the relief of the pin *q* from the recoil-strain.

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

1. So constructing the sliding breech-piece C, and combining it with a non-sliding stock and a non-sliding barrel that its main or body portion is suspended in a space without being supported by guides or ways, while its front portion, *d*, and its rear portion, *e*, are supported by guides, the said rear and front portions *d e* being solid with the body portion, substantially as and for the purpose described.

2. The combination of the breech-piece C, when made with the parts *d e* solid to it, and the horizontal guides *m n c*, lever-guard G, link H, non-sliding barrel A, non-sliding stock B, the whole constructed and operating as described.

3. The combination of the shoulder *p*, link H, lever-guard G, breech-piece C *d e*, stock B B' B^2 B^3, and play-hole *q'*, all substantially in the manner and for the purpose described.

4. The combination of the spring-guard G, link H, breech-piece C *d e*, stock B B' B^2 B^3, and the pins $q\ q^2\ q^3$, arranged so that they are out of line when the guard is closed, all substantially as and for the purpose set forth.

5. So arranging the dovetail-guide *m* that it serves the double function of keeping the mainspring in place and of holding the tail *e* of the breech-piece G in position, substantially as described.

6. The combination of the hammer D and its actuating mechanism with the sliding breech-piece C *d e*, non-sliding barrel, and non-sliding stock, all in the manner herein described.

LE ROY S. WHITE.

Witnesses:
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