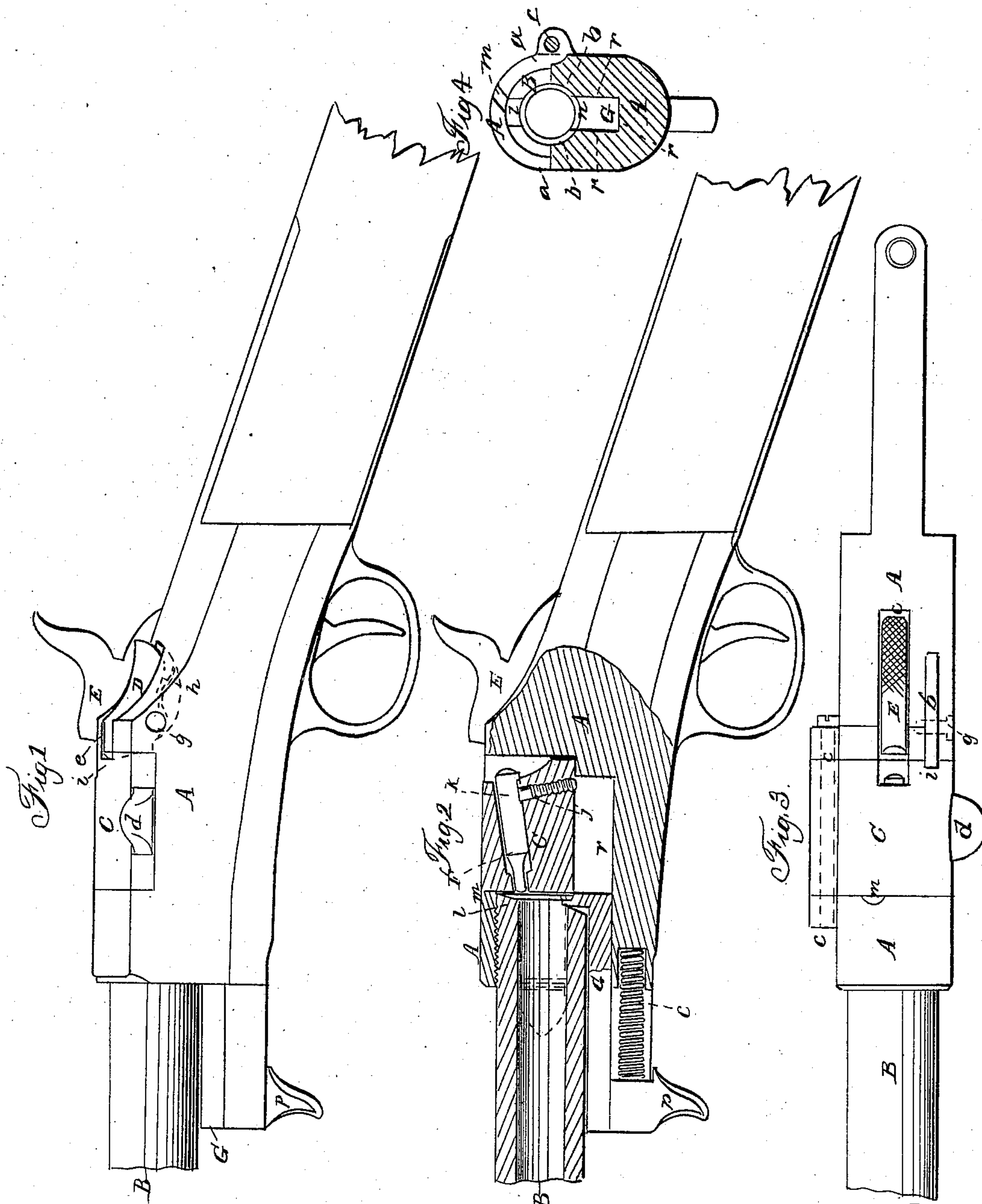


J. WARNER.

Breech-Loading Fire-Arm.

No. 45,660.

Patented Dec. 27. 1864.



Witnesses:

J. W. Coombs
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UNITED STATES PATENT OFFICE.

JAMES WARNER, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 45,660, dated December 27, 1864; antedated December 14, 1864.

To all whom it may concern:

Be it known that I, JAMES WARNER, of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements 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 a part of this specification, in which—

Figure 1 is a side view of the breech part of a fire-arm with my improvements. Fig. 2 is a central longitudinal vertical sectional view of the same. Fig. 3 is a top view of the same. Fig. 4 is a transverse vertical sectional view of the same immediately in front of the breech-piece, looking toward the barrel.

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

This invention consists in certain novel means of producing the extraction of a pin which works through such a breech-block as is abovementioned for the purpose of being struck by the hammer to fire the charge, whereby the necessity for a spring in combination with the said pin is obviated.

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 frame of the arm, having the barrel B screwed into it in the usual manner, and having a suitable cavity, *a a b b*, in the rear of the barrel for the reception of the solid movable breech-block C, which opens and closes the rear end of the barrel by a swinging movement upon a pin or hinge, *c*, situated on the right side of the frame. On the left-hand side of this breech-block is a thumb-piece, *d*, to which to apply the thumb of the left hand to start it from the cavity *a a b b*, if necessary, for the purpose of opening the chamber of the barrel for loading.

D is the locking device for locking the breech-block in the closed position, consisting of a lever fitted to work in a mortise, *e*, which is cut in the frame A, parallel with and on the left-hand side of the mortise *f*, in which the hammer E works. This lever works on a fulcrum-pin, *g*, which is inserted through the slot, and it has applied under it, within the mortise *f* and in rear of the fulcrum-pin, a spring, *h*, which always tends to press upward its rear end, and

thereby cause its front end to enter a notch, *i*, in the rear end of the breech-block when the latter is closed, and so lock the said block in the closed position. The rear end of the said lever projects upward in such a manner that after firing the operator may, without relinquishing the grasp of his right hand, first half-cock the hammer and then apply his thumb to press down the said end of the lever, by which means the front end of the said lever is drawn out of the notch *i* and the breech-block unlocked. By turning the arm over quickly on its right side the breech-block will then usually fall open to permit the loading, the pressure of the left thumb against the thumb-piece *d* being only necessary in case of the breech-block sticking. When the breech-block is swung back into the cavity *a a b b* to close the chamber after loading, it presses against the rounded upper portion of the front of the lever D, and so presses it back until the block arrives in the proper position, when the lever is thrown into the notch *i* by the spring *h*. The facility with which the breech-block can be unlocked by merely shifting the thumb from the hammer to the lever D simplifies the operation of reloading and enables the repetition of the fire to be performed very rapidly.

F is the sliding pin working through the breech-block, for the hammer to strike upon to effect the ignition of the charge. The movement of the pin is limited to what is necessary by means of a screw, *j*, which is screwed into the breech-piece transversely to the said pin, and the point of which enters a notch or groove, *k*, in the said pin. The said pin has no spring applied to it, but is permitted to move back and forth with perfect freedom. In order that it may not interfere with the opening and closing movements of the breech-block, its front end is rounded, and in the upper part of the rear end of the barrel there is a beveled groove, *l*, and in the part of the frame C above the said end of the barrel a beveled groove, *m*, (see Figs. 2 and 4,) the said grooves being so arranged that the end of the pin F may work in them. In the opening movement of the breech-block, the rounded front end of the pin, passing up the bevel of the groove *l*, causes the pin to be forced back flush with the front face of the breech-block, and in the closing movement of the breech-block the said rounded end, if it

protrudes through the front face of the said block, is pushed back flush with the said face by passing down the bevel of the groove *m*. The necessity of the spring is thus dispensed with, and the number of the parts of the arm and the liability to get out of order thereby reduced.

G is the cartridge-shell extractor, of common construction, consisting of a slide arranged below the barrel, and having a turned-up lip, *n*, at its rear end to enter a recess, *o*, in the lower part of the rear end of the barrel, as shown in Fig. 2, the said lip being formed to fit the cartridge-shells. The slide G is furnished below the barrel with a handle, *p*, by which to draw it back by hand for the purpose of extracting the shells after firing, and it has applied to it a spring, *q*, to push it forward again after the extraction of the shell, and preparatory to reloading. To provide a firm bearing directly under the extractor while it is in position for firing, and also during the whole of its backward movement, so that it may support and prevent the explosion of that portion of the flange of the cartridge-shell which is received within it, and also be prevented from slipping past the flange in the act of withdrawing the shell, I provide in the frame A, in the rear of

the barrel and at the bottom of the cavity *aab*, a mortise, *r*, which is just wide and deep enough for the slide G to work in, the said mortise being continued through that portion of the frame immediately under the barrel. The rear end of the slide, which has the tip *n* upon it, rests upon the solid flat bottom of this mortise, both at the time of firing and during the act of extracting, and thus has at all times as firm a bearing as though it were a solid portion of the barrel or frame of the arm. In order that the extractor may not be prevented from coming back to its proper place by any accumulation of dirt between the lip *n* and the barrel, the front of the recess *o* in the barrel is beveled in a downward direction to form a space for the dirt to work into, as shown in Fig. 2.

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

The beveled grooves *l* and *m* in the barrel and frame, in combination with the sliding pin F, substantially as and for the purpose herein specified.

JAMES WARNER.

Witnesses:

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WM. S. SHURTLEFF.