W. H. ELLIOT.

Breech-Loading Fire-Arm.

No. 47,809.

Patented May 23, 1865.

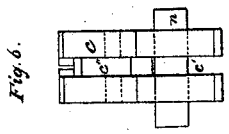

Fig. 6.

Fig. 7.

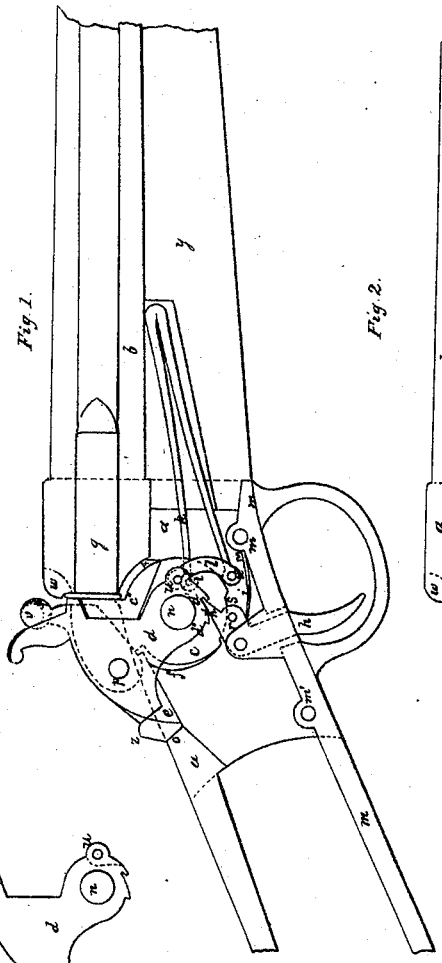

Fig. 1.

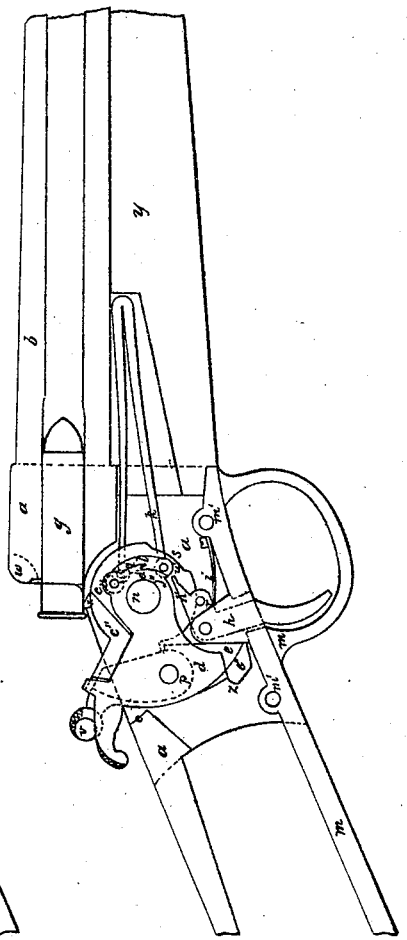

Fig. 2.

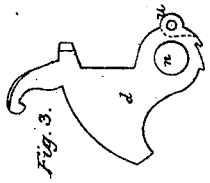

Fig. 3.

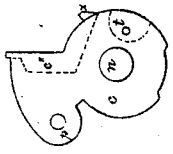

Fig. 4.

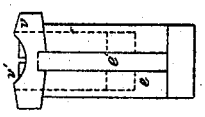

Fig. 5.

Witnesses

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Inventor.

Wm H. Elliot.

UNITED STATES PATENT OFFICE.

WM. H. ELLIOT, OF PLATTSBURG, NEW YORK.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **47,809**, dated May 23, 1865.

To all whom it may concern:

Be it known that I, WM. H. ELLIOT, of Plattsburg, in the county of Clinton, in the State of New York, have invented a new and Improved Breech-Loading Fire-Arm; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Similar letters of reference indicate the same devices in all the figures.

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

The nature of my invention consists in the employment, with the swinging breech-plate of a breech-loading fire-arm, of a brace jointed to the breech-plate and resting against a solid portion of the breech-piece, while the arm is in a position for firing, in such a way as to form a firm support between the breech-plate and breech-piece or frame of the arm, holding the former against the recoil of the cartridge, while it is extended forward so as to form a lever and thumb-piece for convenience in opening the chamber, said lever or brace being so arranged with the breech-plate and its pivot that when the chamber is opened it disappears into the wrist or handle of the arm, and also in pivoting the breech-plate and hammer at the same point.

It also consists in a peculiar method of attaching the mainspring to the breech-plate, so that the latter may be turned back from the chamber without carrying the mainspring with it or changing its position to any great extent, and in so arranging the points of attachment of the mainspring and stirrup to the breech-plate and hammer that the power of the mainspring is exerted to throw the breech-plate forward when the chamber is closed, and to throw it back when it is open; and also in so constructing the several parts that the point of the trigger shall not fall into the full-cock notch upon the hammer when both the hammer and breech-plate are drawn back from the chamber at the same time, but shall readily fall into it when only the hammer is raised or drawn back; and it further consists in so constructing and arranging the hammer and brace in relation to each other that the hammer cannot be drawn back while the brace is depressed, or the brace depressed while the hammer is drawn back or raised.

Figure 1 shows a vertical section of my improved arm with the hammer and trigger in elevation, the chamber being closed by the breech-plate. Fig. 2 is the same, showing the chamber opened, as it is when being loaded. Fig. 3 is a side elevation of the hammer. Fig. 4 is a side elevation of the breech-plate. Fig. 5 is a plan of the brace or lever. Fig. 6 is a rear elevation of the breech-plate. Fig. 7 is a side elevation of the brace or lever.

a is the breech piece or frame of the arm; *b*, barrel; *c*, breech-plate. *c'* is a cut through the breech-plate, which is occupied by the hammer; *c''*, form of the connection between the two sides of the breech-plate; *d*, hammer; *d'*, half-cock notch; *d''*, full-cock notch; *e*, lever. *e'* is a cut through the lever or brace, which is occupied by the hammer; *e''*, form of the connection between the two sides of the brace; *f*, brace-spring; *g*, chamber with cartridge in it; *h*, trigger; *h'*, sear or point of the trigger; *i*, trigger-spring; *k*, mainspring; *l*, stirrup; *m*, guard and tang; *m'*, screws of the same; *n*, pivot of the breech-plate and hammer; *o*, recoil-shoulder on the breech-piece; *p*, pivot of the brace; *r*, pin projecting from the side of the trigger; *s*, cam upon the lower side of the breech-plate, which acts upon pin *r*; *t*, point at which the mainspring is pivoted to the breech-plate; *u*, point at which the stirrup is fastened to the hammer; *u'*, pivot which fastens the lower end of the stirrup to the mainspring; *v*, thumb-piece of the lever; *v'*, cut in the forward end of the lever to allow the cartridge to pass over it in loading the arm; *w*, a portion of the frame cut away to make room for the thumb in operating the lever; *x*, catch upon the breech-plate, which starts back the cartridge; *y*, quarter-stock; *z*, projection upon the rear end of the brace, which serves as a thumb-piece in depressing it.

My improvements relate to that kind of breech-loading arm in which the chamber is closed by a swinging breech-plate, and its operation is as follows: To load, the chamber is opened by placing the thumb upon the thumb-

piece *v*, giving it an upward and backward motion, which raises the forward end of the lever and depresses its rear end, so that it passes under the recoil-shoulder *o*, turning upon joint *p* as a fulcrum. Then by continuing the motion backward the lever, breech-plate, and hammer all pass down into the breech-piece, as represented in Fig. 2. During the latter part of the motion of the breech-plate backward the catch *x* takes hold of the cartridge-shell by the projecting head and starts it out sufficiently to enable it to be drawn by the fingers. When thus opened, the chamber may be charged with a fresh cartridge, and closed again by swinging the breech-plate forward to its place, as represented in Fig. 1. The arm may now be fired in the ordinary way. As the breech-plate turns upon pivot-pin *n* in its backward motion, the cam *s* strikes pin *r* and depresses the point of the trigger, so that it cannot catch into the full-cock notch of the hammer; but as the breech-plate is moved forward again the pin *r* falls into a low place on cam *s* in time to permit the point of the trigger to catch into the half-cock notch, so that the hammer is always left at half-cock after loading, in which position it is the least liable to accident. The rear end of piece *e* serves as a brace, and the forward end serves only as a lever, so that the piece is both lever and brace. In the employment of a brace which is pivoted to a swinging breech-plate, simplicity and durability are obtained with great economy of space, and by extending the brace forward and forming a thumb-piece on its forward end near the thumb-piece of the hammer it is susceptible of being operated in the same manner and with the same facility that the hammer is operated. By attaching the brace to the upper side of the breech-plate and arranging it with its thumb-piece at its forward end it disappears into the breech-piece of the arm when the breech-plate is thrown back, rendering the arm more compact when the chamber is opened for charging than when it is closed and in a position to fire. By pivoting both the hammer and breech-plate upon pin *n*, they both move around the same center, and consequently when the breech-plate is turned back for loading these devices do not change their position in relation to each other. They therefore do not occupy any more room in one position than in the other.

A great advantage arises from hanging the hammer and breech-plate upon the same pivot in connection with the mainspring. One end of the mainspring being attached to the breech-plate and the other end to the hammer by means of the stirrup, the distance of the points of attachment of the mainspring and stirrup from each other is neither greater nor less when the chamber is opened than when it is shut. By pivoting one end of the double mainspring *k* to the breech-plate at *u*, and by attaching the other end of the mainspring to the hammer by means of the stirrup, when the breech-plate and hammer are thrown back the mainspring turns upon pivot *u* and remains almost stationary, only moving from the position represented in Fig. 1 to that in Fig. 2 when the chamber is opened and back again when the chamber is closed.

By a careful examination of Fig. 1 it will be seen that a line drawn from the center of pivot *u* to that of pivot *u'* of the stirrup passes forward of pivot *t*, which attaches the mainspring to the breech-plate, which causes the mainspring to throw the breech-plate forward while the chamber is closed; and by reference to Fig. 2 it will be seen that the same line passes in the rear of pivot *t*, which causes the mainspring to hold the breech-plate back while the chamber is open. By this peculiar arrangement of the pivots *t*, *u*, and *u'* in relation to the hammer and swinging breech-plate, the mainspring serves the purpose of holding the breech-plate forward when the chamber is closed and of holding it back when it is open.

By pivoting both the brace and the hammer to the breech-plate, and by constructing them as herein shown, the brace and hammer cannot both be moved at the same time, so that the arm cannot be fired when the brace is out of the proper position for resisting the recoil. Neither can the brace be got out of that position while the hammer is in a position to fire the arm.

By employing a hammer which moves independently of a breech-plate which is braced as herein described, I obtain, in addition to the advantage of convenience in handling or operating the arm, the still further advantage of locking the breech-plate before the hammer falls, and even before it is cocked, as the hammer cannot be moved till the brace is in its proper place, which is not the case with any other arm that has a brace similarly arranged upon the breech-plate.

Having fully described my improved arm, what I claim as my invention, and desire to have secured to me by Letters Patent of the United States, is—

1. The combination of a hammer, *d*, with a swinging breech-plate, *c*, and a brace, *e*, when these devices are pivoted together substantially as described.

2. Attaching the mainspring *k* to swinging breech-plate *c* by means of a pivot, *u*, substantially as and for the purpose herein specified.

3. So arranging the attachments of a mainspring to a hammer and to a swinging breech-plate that the power of the mainspring shall tend to throw the breech-plate forward when the chamber is closed and to throw it back when the chamber is open, substantially as herein described.

4. Operating upon the point of the trigger

to prevent it from catching into the full-cock notch by means of cam *s* when both the breech-plate and hammer are thrown back together, as herein shown.

5. So constructing and operating the hammer and brace, in combination with a swinging breech-plate, that said hammer and brace cannot both be moved at the same time, substantially as and for the purpose herein set forth.

WM. H. ELLIOT.

Witnesses:
M. LEWIS,
E. ROCHE.