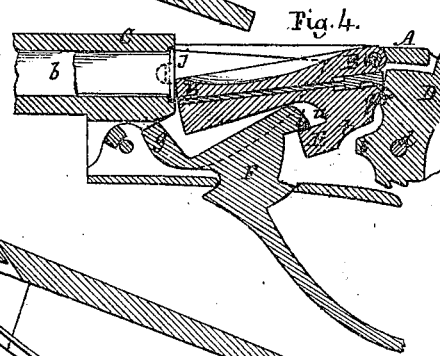
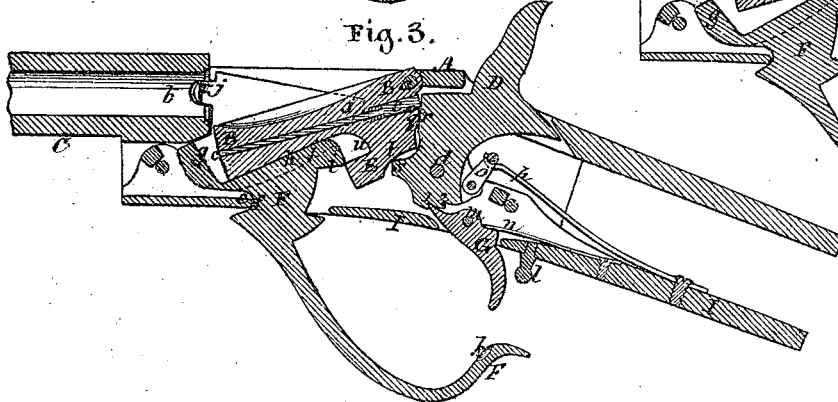
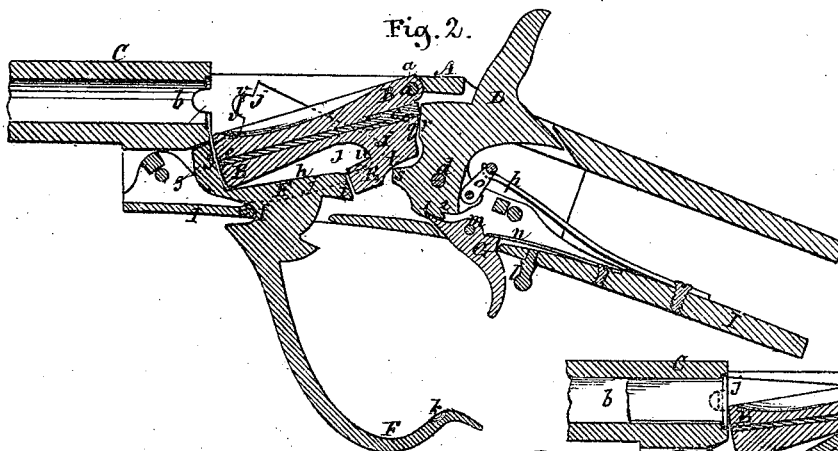
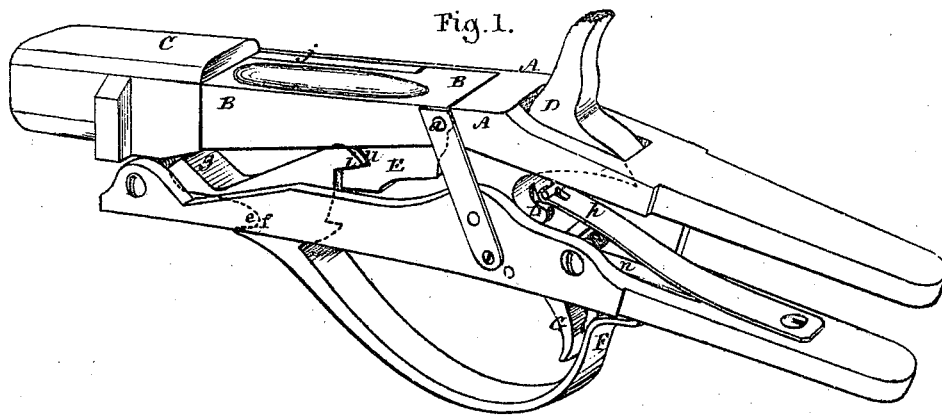


JAMES LEE.

Improvement in Breech-Loading Fire-Arms.

No. 114,951.

Patented May 16, 1871.



Witnesses.

Henry K. Hyatt
Edmund Mason.

James Lee.
 By Atty. A. B. Stoughton.

United States Patent Office.

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Letters Patent No. 114,951, dated May 16, 1871.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES LEE, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Lever-Breech Breech-Loading Fire-Arms; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents in perspective so much of the fire-arm in question as will illustrate my invention.

Figures 2, 3, and 4 represent longitudinal vertical sections through the arm, with the parts in different positions to better show their action.

Similar letters of reference, where they occur in the separate figures, denote like parts of the arm in the drawing.

The invention relates, first, to the construction and operation of a breech-block, hinged at its rear end, and so connected with a lever that the latter shall first draw said breech to a loading position, and then, by continuing its motion independently of the breech, or while the breech remains stationary, it shall extract the shell of the cartridge.

It further relates to a breech-block hinged at its rear end and raised automatically, by the pressure or recoil of the main spring, sufficiently to hold the cartridge in the chamber and prevent it from dropping out.

It further relates to a lever swinging upon a variable or changing center of motion in front of a breech-block that is hinged at its rear end, so that it may operate said breech-block.

It further relates, in connection with a breech-block hinged at its rear and with the lever for operating it, to the arrangement of the cartridge-extractor, forming a part of and moving with said lever.

It further relates to the arrangement, in connection with a breech-block hinged at its rear end and having a firing-pin in or passing through it, of a lever so operating that it shall force the firing-pin back during its descent.

It further relates to a construction and operation of a lever so as to produce four movements during its descent, namely, depressing the breech to a loading position, ejecting the cartridge-shell, pushing the hammer back to half-cock, and forcing back the firing-pin.

It further relates to the construction by which a breech-block, hinged at its rear end, and a hammer arranged directly at its rear, shall so act that when the hammer is pushed back by the downward movement of said breech-block it will be retained in that position, and can neither be brought to a full-cock nor let down from a half-cock during the operation of loading.

It further relates to a cartridge-extractor that will draw or press the head of the cartridge against the breech-block before the descent of the hammer.

It further relates to the arrangement of the hammer and its thumb-piece directly in rear of a breech-block hinged at its rear end, so that the hammer may be used for operating said block; as, for instance, in closing it as the hammer is drawn back to the full-cock.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawing.

To the frame A of the fire-arm is pivoted, as at *a*, the breech-block B so as to swing up and down at its forward end to close or open the bore or chamber *b* of the barrel C, as will be explained.

Through the breech-block, centrally, is passed a firing-pin, extending clear through, which is struck by the fall of the hammer D, arranged immediately behind the breech-block and pin, and in line with the axis of the barrel C, said hammer being pivoted to the guard-strap I at *d*.

On the under side of the breech-block there is a shouldered projection, E, which acts in connection with both the hammer D and with the lever F.

The lever F, the construction of which is clearly seen in figs. 2 and 3, swings upon a variable center of motion. During the first part of its movement it swings from or around an imaginary center, nearly coincident with the nib or projection *v* of the extractor, until the breech has been depressed to its loading position, and then it rocks upon its curved portion *e* and moves rearward to remove the exploded cartridge.

Upon this lever F are made the faces or shoulders *g* *h* *i*, as also the cartridge-shell extractor *j*, all of which are permanent upon and move and act together with the lever when it moves or acts.

The lower rear end of the lever has a recess, *k*, in it, which, when it is brought up against the stud or pin *l*, holds it by frictional contact therewith.

The trigger G is pivoted at *m*, and controlled by a spring, *n*, and is represented in figs. 2 and 3 as holding in the half-cock notch 1 of the hammer, 2 representing the full-cock notch.

The main or hammer-spring is represented at *p*, and is connected with the hammer through the arm *o*.

All the parts forming the lock are assembled upon the guard-strap I, so that the whole of the lock is readily and easily removable, for the purpose of cleansing, by simply taking out the guard-strap.

On the swinging breech-block at its rear, and below its center of motion, there is a slight projection, *q*, which, when said breech-block is drawn down by the lever F into a loading position, takes against a projection, *r*, on the hammer D, and moves the hammer back to the half-cock position, where it is caught by the trigger, and when in this position it cannot be let down on account of these contact points, nor can it be brought to a full-cock, as another projection, *s*, on the hammer, locks against the under projection

E, as at *t*, and prevents said hammer from being drawn back to full-cock.

When the breech-block is swung up to close the bore of the arm—as, for instance, in charging the arm or for firing it—it is held up, as seen in fig. 1, by the projection *i*, on the lever F, taking into the recess *u* in the under projection E of the breech-block, and the top of said projection *i* may also bear against the under side of the breech-block, or into or against the curved shoulder or recess at *u*, while the lever itself is also held at its extreme end by the friction-pin or stud *l*.

When the arm is discharged and is to be reloaded, the breech-block is drawn into the loading position, as seen in fig. 3, by means of the lever F, and the movement of the lever F necessary to accomplish this is not of such extent as to start, or possibly just start, the shell-extractor *j*; but by continuing the downward movement of the lever the projection *i* leaves and slips past the recess *u*, and then the extractor moves into the position shown in fig. 2, drawing out the empty case, while the breech-block may remain stationary in the loading position first mentioned.

When the lever F comes clear down to the end of its movement the face or shoulder *g* on it comes up against the front end of the breech-block, and, should the firing-pin project therefrom, from clogging—there being no spring to draw it back, and in which projected position it would prevent the breech-block from swinging up past the end of the barrel—said shoulder or projection *g* will drive it back, and so prevent any such casualty or delay.

In entering the cartridge into the chamber or bore of the barrel, the parts being in the position shown in fig. 2, the flange of the cartridge comes against the projection *v* on the extractor *j*, and by continuing to force the cartridge into the bore of the gun it carries with it the lever F sufficiently far to hold the cartridge in the chamber, as seen at fig. 4, and leaves the shoulders *i* and E in such position that, when the hammer is brought back to the full-cock, its projection *s*, taking against the part *t* of the breech-block, raises it entirely up, where it is locked by the lever and its projections. The breech-block may, however, be brought up by the lever alone, if so preferred; and when it is done by the hammer the latter lifts the breech-block before it reaches its full-cock position.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

1. The combination of the breech-block, hinged at

its rear end, and the lever F, so that said lever, in being operated, shall first draw down the breech-block into a loading position, and then, by continuing its motion while the breech-block remains stationary, move the extractor to draw out the empty case, substantially as described.

2. In combination with a breech-block hinged at its rear end, and a lever extractor, the raising or setting of the lever by the act of introducing the cartridge, so that the expansion of the main spring through the hammer may raise the breech-block far enough to catch and hold the cartridge from dropping out of the gun, substantially as described.

3. In combination with a breech-block hinged at its rear, a lever moving around a variable center of motion near the front of and slightly underneath said breech-block, substantially as described.

4. In combination with a breech-block hinged at its rear end, and with a lever for operating it, a cartridge-extractor moving with said lever and around the variable center of motion of said lever, substantially as and for the purpose set forth.

5. In combination with a breech-block hinged at its rear end, and having a firing-pin passing through it and operated by a lever, as described, a projection or shoulder on said lever for driving back the firing-pin, should it, from any cause, fail to return into the breech-block after being driven out by the hammer, substantially as described.

6. The construction and operation of the lever, substantially as described, so as to produce four movements during its descent, namely: depress the breech into a loading position, eject the cartridge-shell or case, push the hammer back to a half-cock, and force back the firing-pin, as described and represented.

7. The combination of a breech-block hinged at its rear end, and a hammer arranged directly in its rear, the devices by which, when the hammer is brought and caught at the half-cock by the downward movement of said breech-block, it can neither be let down from said half-cock nor brought to the full-cock, as described and represented.

8. The arrangement of the hammer and its thumb-piece and a breech-block hinged at its rear end, substantially as described, so that the hammer can be used for operating said block—as, for instance, in closing it as the hammer is drawn back to the full-cock.

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Witnesses:

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HENRY D. GOODWIN.