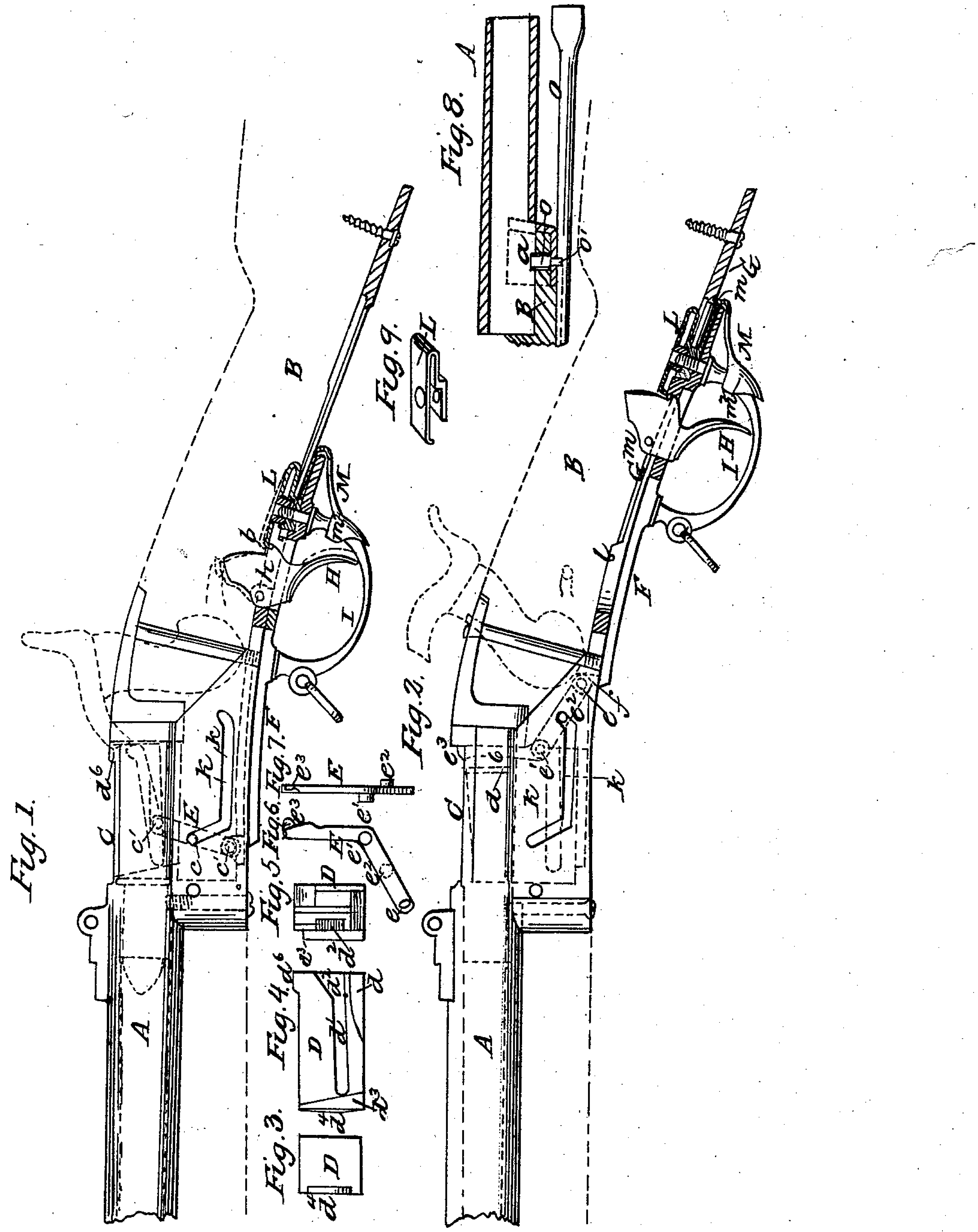
J. V. MEIGS.

Breech Loading Fire Arm.

No. 81,100. Patented Aug. 18, 1868.



Witnesses:
Balta D Long
J W Meister

Inventor:
J. V. Meigs
by his Attys
Baldwin & Sons

N. PETERS, Photo-Lithographer, Washington, D. C.

United States Patent Office.

JOE V. MEIGS, OF WASHINGTON, DISTRICT OF COLUMBIA.

Letters Patent No. 81,100, *dated August* 18, 1868; *antedated August* 5, 1868.

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, JOE V. MEIGS, of Washington city, in the District of Columbia, have invented certain new and useful Improvements in Breech-Loading Fire-Arms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a view partly in elevation and partly in section of a gun embracing my improvements, the portions enclosing the breech being represented as transparent, and the parts being shown in the attitude they assume at the moment of firing.

Figure 2 represents a similar view of the same, with the breech opened. The hammer in this figure is shown as being at full cock.

Figures 3, 4, and 5, respectively represent views of the front, the left side, and the rear of the breech-block.

Figures 6 and 7 respectively represent side and edge views of the retractor and inserter.

Figure 8 represents a device for preventing the ramrod from slipping from its socket.

Figure 9 is a view in perspective of the locking-spring catch.

It is the object of my invention to provide an efficient breech-loading small-arm, and the invention herein claimed, consists in certain improvements, hereinafter more fully described, on the gun patented by me, May 22, 1866.

In the accompanying drawings, which represent a Springfield muzzle-loading rifled musket of the present day, converted into a breech-loader on my improved plan, the barrel A is shown as inserted into its stock B, the outlines of which are indicated by dotted lines. An oblong slot or mortise, C, is cut vertically through the barrel, just in front of the breech-plug. This slot is somewhat wider than the bore, and its length somewhat exceeds that of the cartridge. A breech-block, D, fits and slides loosely in this slot, at right angles to the bore of the gun, being controlled in its movements by a bent lever or link, E, pivoted at its lower end to the front end of the guard-plate F, which slides in a longitudinally-slotted guide, G, secured to the under side of the stock. The trigger H and guard I are attached to the sliding plate.

The breech-block, as shown in figs. 3, 4, and 5, is formed with a recess, d, in its under side at the rear end, in order that the pivot e of the link, may slide under it a short distance without lifting it.

A horizontal slot, d^1, is cut in the left side of this block. The end of this slot has an open flaring mouth, d^2. The block is cut down so as to leave a vertical flange, d^3, on its front left corner, and a long vertical opening between the left side of the block, and the wall of the breech. The block is made to play loosely in its slot, and has on its right-hand side a projection, d^4, which serves as a firing-pin, as hereinafter explained.

The breech-block is moved up and down by the link E, constructed (as shown in figs. 6 and 7,) in the form of a bent lever, and having a guide-pin, e^1 e^2, on each side. The lower end of this link, it will be observed, is pivoted to the sliding guard by a pin, f, on the guard entering an eccentrically-formed hole, e, on the link, by which arrangement the link is allowed a slight play on its pin. The outer pin e^2 on the link, plays in a slot, k, in a plate, K, bolted to the guard-plate, while the inner pin e^1 traverses the groove d^1, in the breech-block. A hook, e^3, on the upper end of the link, serves to extract the cartridge.

A locking-spring, L, takes into a notch, l, in the guard-plate G, when shoved forward, and holds the breech securely at the moment of discharge.

The projection h on the trigger, releases the spring from the notch, and leaves the guard free to slide back.

The same result may be attained by a spring-catch, M, arranged underneath the guard-plate G′, and at the back of the guard, so as to slide with it. A projection or corner, m, catches into a corresponding depression, m^1, in the guard-plate. A clasp, m^2, on this spring-catch, embraces the back of the trigger-guard and strengthens the catch. The catch is released by pressing forward with the fingers, which naturally rests behind the guard in firing.

I have found that in the rapid firing of breech-loading small-arms, the ordinary catch is entirely insufficient to prevent the ramrod from slipping from its socket. To hold the ramrod securely in place, I insert a screw, *o*, into the stock near the muzzle from the inner side, so that it may project a little, and cut a notch, *o'*, into the ramrod O. The ramrod is pushed into its socket, and either turned until its socket *o'* engages with the catch, or it may be sprung over the pin, and shoved in until the pin enters the socket. It is withdrawn in either of these ways.

It is deemed unnecessary here to describe in detail the construction of the other parts of the gun, as the construction of the Springfield musket is well understood.

The operation of my gun is as follows: In fig. 1, the parts are shown in the positions they respectively occupy at the moment of firing, in which it will be seen that the pulling of the trigger releases the holding-catch L. It will also be observed that the breech-block D is pushed into the slot C, in line with the barrel, where it is upheld by the pin e^1, and that as the force of the explosion is exerted in the line of the slot d^1, the force of the explosion would act on the breech-plug, instead of on the supporting-pin.

As the guard is retracted, the pin *f* moves backwards in a line nearly parallel to the bore, the outer pin e^2 slides down the inclined front part of the slot *k*, while the inner pin e^1 slides forward in the groove d^1. The block D is thus drawn down, while the head or hook e^3 of the link E, moves forward and hooks over the flange of the exploded cartridge-shell, a slight groove being left in one side of the barrel for that purpose. At the moment the hook e^3 strikes the cartridge-case, the pin e^2 passes from the inclined to the horizontal part of the slot *k*, and the lower part of the link E is nearly horizontal. The continued backward movement of the guard then withdraws the exploded shell so quickly, that it is thrown out by its contact with the projection d^6. The slot *k* is slightly inclined upward, and the backward movement of the link raises the hook e^3, until the guard reaches the limit of its backward stroke, when the parts occupy the position shown in fig. 2. It will thus be seen that the link or lever E has three fulcra, all movable, namely, one on the guard, one in the slot *k*, and one in the block.

In fig. 2, the parts are shown in the proper position for loading, except that the hammer should be down, as in fig. 1. The cartridge is now dropped into the slot C, resting on the breech-block, and the guard shoved forward. The relative arrangement of the pins and slots is such that the hook e^3 on the link or lever E moves forward horizontally nearly the whole length of the breech-block before the latter begins to rise, and consequently shoves the cartridge into the chamber of the gun before the block rises. The moment the cartridge is in place, the pin e^2 begins to ascend the inclined part of the slot *k*, the pin *f* moves up in its socket *e*, pressing at its front side, thus depressing the hook e^3 of the lever E, taking advantage of the curvature of the flange of the cartridge-shell, and lifting its hook e^3 over the edge, allowing the lever E to move forward, so that its face shall come to the line of the end of the barrel, where the front edge of the lever comes in contact with the projection d^3, preventing its jamming upon the head of the shell, and the breech-block is rapidly thrown up into line with the bore. As the block rises, the hooked end of the lever or link E also rises, and moves backward until it assumes the position shown in fig. 1, in which position its pin e^1 holds the breech-block in place, while out of the way of the soldier, and subject to no strain from the explosion. The gun is now cocked and fired in the usual way.

My invention is adapted to the use of a firing-pin for either a rim or central-fire cartridge, but I have made the block itself the firing-pin. The breech-block, when in place, does not quite touch the hammer, and fits the slot C, so as to resist the explosion in case of rupture of the shell, will permit the gases to escape above and below the block, and thus avoid the rupture of the gun from this too common cause. A projection, d^4, rests against the primed flange of the cartridge. I have found, by experiment, that while there is no perceptible play of the block in its slot, yet the hammer, when sprung, strikes with sufficient force to explode the charge with certainty.

As the block moves down after the explosion, the hook e^3 moves forward and hooks over the flange of the cartridge to draw it out. Should it fail to extract the shell at first, owing to the flange tearing away, the movement can be repeated by sliding the guard forward until it catches, and its peculiar mode of striking over and forward, tends to rotate the shell, and thus presents a new edge to the hook e^3, which is a very great advantage, and one possessed by no other retractor with which I am familiar.

From the foregoing description, it will be seen that I have secured an efficient breech-loader, by the combination of three simple elements, viz, a sliding guard, a sliding-breech block, and a link or lever connecting the two, and that the gun is loaded by two simple movements, a forward one of the guard parallel to the bore, and an upward one of the breech-block transversely to the line of the bore, and that the cartridge is expelled by reversing this movement.

The lever E, it will be observed, serves both to insert the loaded cartridge and to expel the exploded one; it also acts as a link to connect the sliding guard with the breech-block; I have therefore termed it indifferently a "lever," a "link," or a "retractor."

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

1. The loose breech-block D, constructed, arranged, and operating as and for the purposes described.

2. The bent lever or link E, constructed, arranged, and operating as and for the purpose described.

3. The hook e^3, constructed as described, and vibrating in a vertical plane, to push in the cartridge as the breech is closed, and hooking over the edge of the cartridge-shell as the breech is opened.

4. A cartridge-inserting and extracting-lever, having three movable fulcra or working pivots, substantially as described.

5. The combination of the sliding guard, the vibrating-lever E, and the breech-block, all constructed and arranged for joint operation as described.

6. The combination of a vertically-sliding horizontally-slotted breech-block, with a vibrating-lever, having a pin working in the slot of the breech-block, whereby the block is held up to close the breech securely without strain on the lever.

7. The combination, as described, with the hammer, of the vertically-moving loose breech-block, constructed as described, whereby the block can be used as a firing-pin.

In testimony whereof, I have hereunto subscribed my name.

JOE V. MEIGS.

Witnesses:

BALTIS DE LONG,

J. W. MISTER.