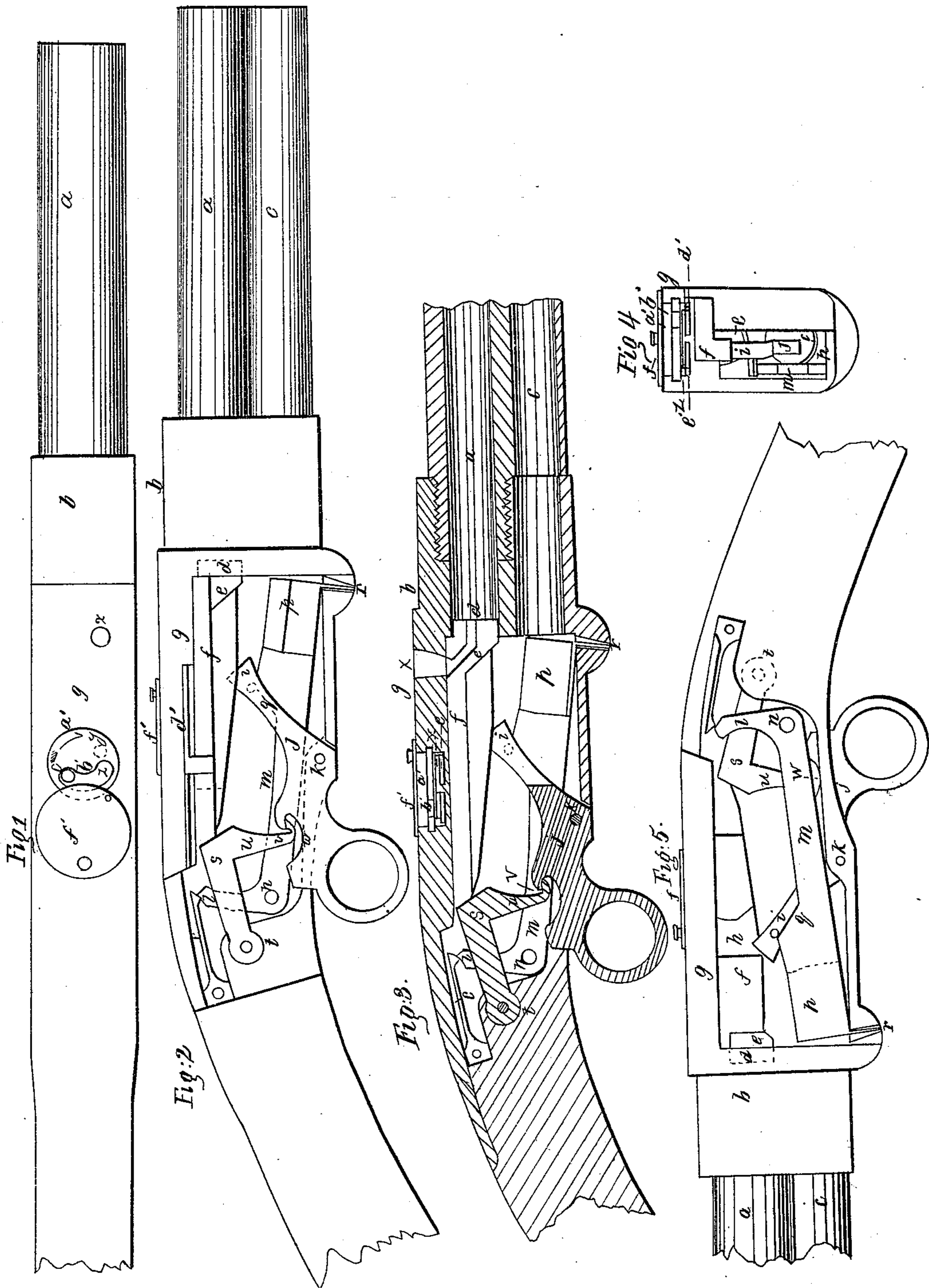


## Magazine Fire-Arm.

Patented Aug. 26, 1851.

No. 8,317.



# UNITED STATES PATENT OFFICE

CORTLANDT PALMER, OF NEW YORK, N. Y., ASSIGNEE OF HORACE SMITH,  
OF NORWICH, CONNECTICUT.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 8,317, dated August 26, 1851.

*To all whom it may concern:*

Be it known that I, HORACE SMITH, of Norwich, Connecticut, have invented new and useful Improvements in Breech-Loading Fire-Arms; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a right-hand side elevation with the lock-plate removed; Fig. 3, a longitudinal section taken in the plane of the axis of the barrel; Fig. 4, a cross-section in the plane of the axis of the priming-wheel, and Fig. 5 a left-hand side elevation with the lock-plate removed.

The same letters indicate like parts in all the figures.

My invention relates to improvements in the fire-arms secured by Letters Patent granted to Lewis Jennings on the 25th day of December, 1849, in which the charges are, one by one, received from a magazine parallel with and below the barrel, and transferred onto a lifter, by which they are elevated and brought into the line of the barrel by a movable breech-pin.

The first part of my invention consists in operating the movable breech-pin to force the charge into the barrel and to reopen the breech for the reception of another charge by means of an arm of a lever, which arm is fitted to work in a recess in the breech-pin carrier, the said lever being operated by the finger outside and below the lock, when this is combined with the mode of operating a recoil-lever which is carried up to abut against the back of the breech-pin carrier, when the breech-pin is inserted in the barrel to resist the force of the explosion, the said recoil-lever being operated up and down by the direct action of the lever which operates the breech-pin.

The second part of my invention, which relates to the method of transferring the charge to the line of the barrel, consists in elevating the charge-lifter by the breech-pin carrier coming in contact with an arm of the lifter, and depressing it by the finger-lever coming in contact with the other arm thereof, in combination with a spring acting on a double-inclined face of one arm of the lifter, so that the tension of the said spring

shall complete the movements of the lifter, either up or down, after the movements have been commenced in one direction by the breech-pin carrier, and in the other by the finger-lever.

And the last part of my invention consists in combining the breech-pin carrier with a revolving plate at the bottom of a magazine of pills of percussive powder by means of a rack attached to the breech-pin carrier, the cogs of which engage the cogs of a pinion on the said plate, so that when the breech-pin is drawn back the plate shall be rotated to carry a priming-pill from the magazine and deposit it in the touch-hole of the breech-pin, and when the breech-pin is moved forward to its place for a discharge the plate shall be turned back to receive another priming-pill, preparatory to another operation.

In the accompanying drawings, *a* represents the barrel, with an open breech, and properly fitted to a breech-piece, *b*, at the back. Below the barrel is the magazine *c*, for containing the cartridges or charges, and from which they are drawn one by one, in the same manner as in Jennings's gun, patented as before stated, or in any other desired manner, as this makes no part of my invention.

To the breech of the barrel is properly fitted a breech-pin, *d*, formed on the forward end of a block of metal, *e*, which is termed the "breech-pin carrier" *f*. The upper face of this breech-pin carrier is made perfectly flat, and adapted to slide in contact with the under face of the plate *g* of the breech-piece, the other parts of the said carrier and breech-piece being formed as represented, or in any other appropriate manner, so as to keep the parts in place while moving back and forth in the line of the barrel.

A recess, *h*, is formed in the left-hand side of the said carrier to receive the end of an arm, *i*, of a finger-lever, *j*, that turns on a fulcrum-pin, *k*, the lower arm of the said lever being formed with a loop for the finger, by which it is to be operated. This connection of the lever and the breech-pin carrier is such that the operator in forcing forward the finger-lever will move back the breech-pin to open the breech of the barrel, and in drawing back the said lever will carry the breech-pin into and thus close the breech of the barrel.

As the breech-pin carrier is forced back, and toward the end of its back movement, the rear end thereof strikes against an arm, *l*, of a lever, *m*, that turns on a fulcrum-pin at *n*, and forces it back. The upper end of this arm has two faces, inclined to each other, forming a bevel face, on which bears a spring, *o*, that is also formed with a bevel face, so that when the most prominent part of the two faces have passed each other the tension of the spring will complete the motion of the lever *m*.

The front end of the other arm of the lever *m* is in the form of a semi-cylindrical cup, *p*, adapted to receive and hold a cartridge or charge, which passes into it from the magazine when in its lowest position, so that when the breech-pin is moved back and strikes the arm *l* the cup *p*, called the "lifter," is elevated to bring the cartridge or charge in the line of the barrel, and then by drawing back the finger the breech-pin is forced forward and carries the cartridge or charge into the barrel; and toward the end of this movement a pin on the arm *i* of the finger-lever comes in contact with an inclined face, *q*, of the lever *m* and forces it down, that the lifter may be in the proper position to receive another charge or cartridge from the magazine.

When the lifter is up in the line of the barrel the cartridges or charges are prevented from passing out of the magazine by a flange, *r*, that projects downward from the front edge of the lifter.

After the breech-pin has been forced into the breech of the barrel, it is necessary, before the charge takes place, that the breech-pin be secured to resist the recoil. This is effected by means of an abutting lever, *s*, one end of which is rounded and fitted to a recess, *t*, in the breech-piece, in which it works as a hinge, while the other end, when elevated, fits against the back of the breech-pin carrier, thus effectually resisting the recoil. This lever has an arm, *u*, the lower end of which is rounded, with a lip, *v*, in front.

The finger-lever is formed with a recess, *w*, the curved face of which acts on the lower end of the arm *u*, to force up the abutting lever *s* when the finger-lever is drawn back to carry the breech-pin into the barrel; and the upper part of the recess *w* is hook-formed, so that on the return motion of the finger-lever to draw back the breech-pin, the hook of the finger-lever comes in contact with the lip *v* and draws down the abutting lever before the breech-pin begins to move back.

The touch-hole passes through the breech-pin (see Fig. 3) to the surface of the breech-pin carrier, and is there enlarged to receive and hold a percussion-pill; and when the breech-pin is in its forward position the touch-hole corresponds with a hole, *x*, in the top plate, through which the hammer of the cock

passes to effect the explosion; but when the breech-pin is drawn back, then the touch-hole corresponds with another hole, *y*, (see Figs. 1 and 3,) in the lock-plate, over which is placed a rotating plate, *z*, in the bottom of a magazine, *a'*, that contains percussion-pills for priming. The bottom of this magazine is perforated for a part of a circle, as at *b'*, and the plate *z* is pierced with a hole, *c'*, which, when the breech-pin is moved forward, comes under the open part of the bottom of the magazine to receive a pill, and when the breech-pin is drawn back passes around under the solid part of the bottom of the magazine, and over the touch-hole of the breech-pin, to deposit the percussion-pill priming.

The required motions are given to this plate by means of a rack, *d'*, attached to the breech-pin carrier, the cogs of which engage a pinion, *e'*, on the arbor of the priming-plate *z*. The magazine is covered with a hinged cover, *f'*, to inclose it.

It will be seen from the foregoing that as the charges or cartridges are one by one passed from the magazine to the lifter, by pushing forward the finger-lever, the breech-pin is drawn back, which opens the breech of the barrel, the lifter elevated to bring the charge in a line with the barrel, the touch-hole of the breech-pin carrier is brought to the proper place, and the rotating plate at the bottom of the priming-magazine is rotated to discharge a priming-pill into the touch-hole of the breech-pin carrier; and then, on drawing back the finger-lever, the breech-pin is forced forward to carry the charge or cartridge into the breech of the barrel, and to close the breech the priming-pill is brought under the hole through which the hammer of the cock strikes to produce the explosion, the plate at the bottom of the priming-magazine is rotated back to its original position to receive another pill, and the abutting lever is elevated to hold the breech-pin in place to resist the force of the explosion and prevent the breech-pin from yielding to the force of the explosion.

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

1. Operating the breech-pin directly by the finger-lever, as herein described, in combination with the breech-pin and abutting lever, formed and operating substantially as herein described, and for the purpose specified.

2. I also claim elevating the charge-lifter by the direct contact of the breech-pin carrier with an arm of the lifter-lever, and depressing it by the direct contact of the finger-lever with the other arm of the said lifter-lever, as described.

HORACE SMITH.

Witnesses:

WM. H. HOLMES,  
EDMUND PERKINS.