E. T. STARR.

Breech-Loading Fire-Arm.

No. 21,523. Patented Sept. 14, 1858.

Fig 1

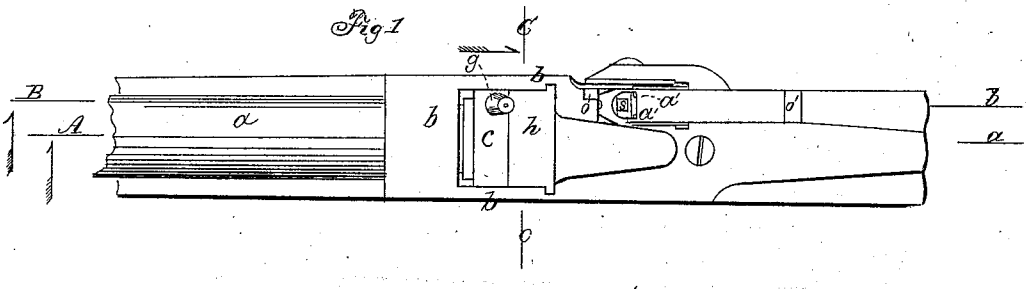


Fig 2. A. a

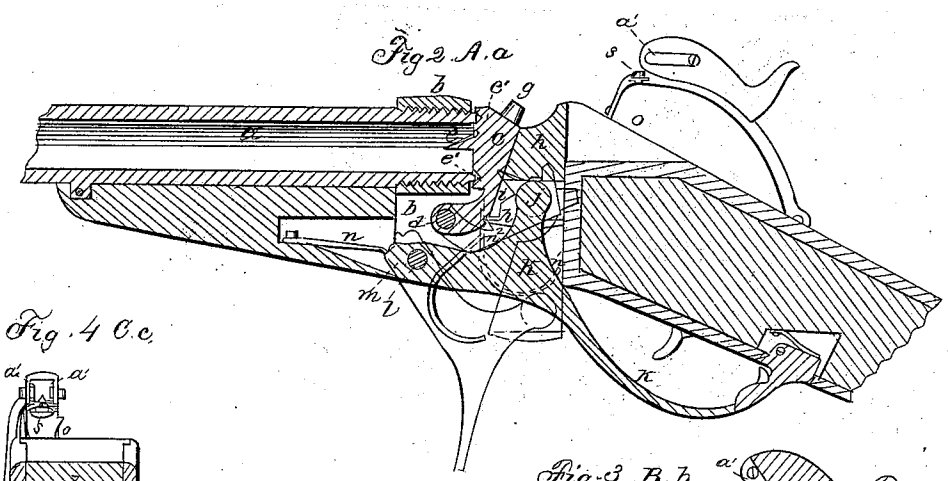


Fig. 4 C. c.

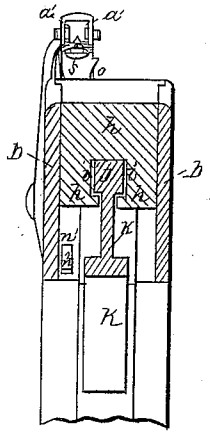


Fig. 3 B. b.

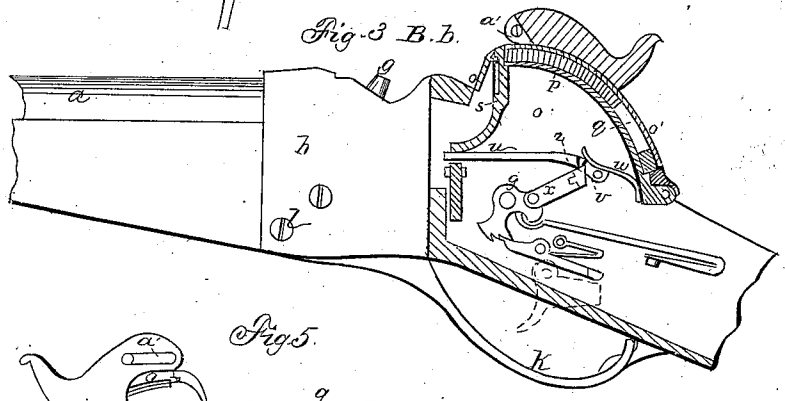
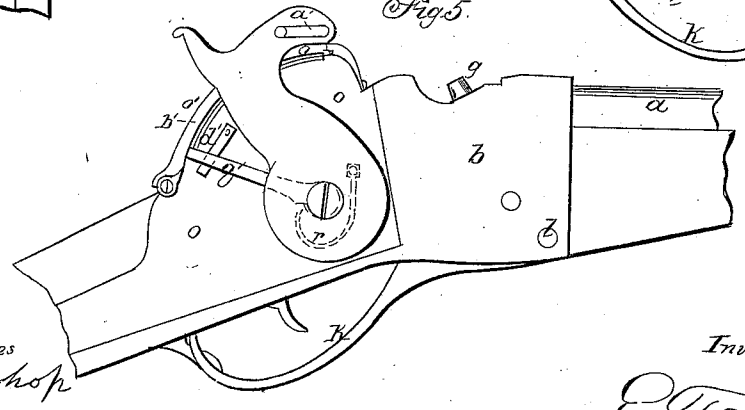


Fig 5.



Witnesses

Wm. H. Bishop

J. E. Wilson

Inventor.

E. T. Starr

UNITED STATES PATENT OFFICE.

E. T. STARR, OF NEW YORK, N. Y.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **21,523**, dated September 14, 1858.

To all whom it may concern:

Be it known that I, E. T. STARR, of the city, county, and State of New York, have invented certain new and useful Improvements in Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a longitudinal section taken at the line A *a* of Fig. 1; Fig. 3, another longitudinal section taken at the line B *b* of Fig. 1; Fig. 4, a cross-section taken at the line C *c* of Fig. 1, and Fig. 5 a side elevation.

The same letters indicate like parts in all the figures.

My invention consists in applying at the rear and open end or breech of the barrel a hinged breech-plate, by the turning of which the bore of the gun-barrel will be opened to receive the charge and then closed to confine the charge when this is combined and connected with a sliding wedge or its equivalent, so that by drawing down the said wedge the breech-plate will be turned back to expose the open end or breech of the barrel for the reception of the charge, and by forcing up the said wedge the breech-plate or flap will be forced up and held against the face of the rear end of the barrel to inclose the charge and to resist the recoil due to the force of the discharge.

In the accompanying drawings, *a* represents the barrel with the bore open at the rear end, and connected with the stock by a metallic case, *b*, cut out or otherwise made hollow for the reception and working of the breech plate or flap *c* and its appendages. The breech-plate *c*, the face of which fits close against the rear end of the barrel, turns on a fulcrum-pin, *d*, (see Fig. 2,) below and a little forward of the rear face of the barrel. The face of the breech-plate is provided with a punch, *e*, that enters the barrel to punch the rear end of the cartridge, and the face of this breech plate or flap is recessed, as at *e'*, with the rim surrounding the said recess, beveled as represented, so that when the said breech plate or flap is thrown forward the rear end of the barrel is surrounded by the said rim to deflect or throw forward any fire which may escape between the breech-plate and barrel. As represented in the drawings, Fig. 2, the recess is in the form of an annular groove; but the inner projection may be dispensed with, as the essential part is the surrounding rim.

The nipple *g* is secured to this breech-plate and the touch-hole passes through to the punch, which is grooved along its upper surface to guide the fire to the inside of the cartridge. Back of the breech-plate there is a movable wedge, *h*, fitted to slide inside of the case *b*. The front face is fitted to the rear face of the breech-plate and its back face to the back of the recess in the case *b*, so that when forced up it shuts the breech-plate close up against the breech of the barrel and incloses the charge, and when drawn down it liberates the breech-plate to open the rear end of the barrel for the reception of a charge.

The wedge is formed with a recess, *i*, which receives a circular projection, *j*, on a lever, *k*, fitted to and turning on a fulcrum-pin, *l*, in the under side of the case *b*, and this lever, when drawn up, forms the trigger-guard. As the circular projection *j* of the lever works in the recess *i* of the wedge, when the lever is drawn down to the position represented by the red lines, it draws down the wedge to liberate the breech-plate, and when the said lever is drawn up to its position as a guard the wedge is forced up, which throws the breech-plate up against and incloses the breech of the barrel, to confine the charge. The forward end of the lever, beyond its fulcrum-pin, has a notch, *m*, (see Fig. 2,) or recess, which, as the lever is drawn up, receives the end of a spring, *n*, the tension of which acts downward to hold the lever and wedge in place. As the lever is thrown down, and with it the securing-wedge, the under surface of the wedge strikes the end *n'* of a curved arm, n^2, attached to the breech-plate, to throw it back, and thereby to open the barrel. The inclination of the wedge, although sufficient to force the breech-plate to its place, is not sufficient to yield to the force of the discharge, and nothing short of a force sufficient to break the case *b* will liberate the breech-plate.

In the upper part of the lock-plate *o* is formed a primer-tube, *o'*, to contain disk-primers *p*, (see Fig. 3,) which are pushed forward toward the delivery end by a follower, *q*, on a vibrating arm, *q'*, (see Fig. 5,) acted upon by the tension of a spring, *r*; and in front of the delivery-aperture of the tube is placed a car-

rier, *s*, (see Fig. 3,) which slides vertically in the lock-plate. The upper end is recessed, as represented, to receive one primer at a time from the tube. The carrier is connected with the end of a lever, *u*, which turns on a fulcrum-pin, *v*. The tension of a spring, *w*, acts on the lever to force it and the carrier down to their position for the reception of a cap from the tube. In the act of cocking, an arm, *x*, on the tumbler *y* acts cam-like on the front face of a spur, *z*, projecting from the side of the lever above its fulcrum, and thus forces up the lever and the carrier with a primer on it, which is by this means introduced in a recess between two lips, *a'*, on and projecting from the hammer, and one on each side of the face, one or both of these lips being on a spring to grip and hold the primer. Having carried up and lodged the primer in the hammer, the carrier is immediately carried down by the tension of the spring *w*, the arm *x*, carried by the tumbler, having at that time just passed the spur on the lever, to permit the return movement. The arm *x* is now, however, below the spur *z*, which would prevent the operation of the cock in priming; but to prevent this the arm *x* has a lateral play, and the spur is beveled on its side, so that the arm yields laterally to pass over the spur, and, having passed, resumes its original position to act on the spur for priming at the next cocking operation.

The primer-tube has a longitudinal slot, *b'*, (see Fig. 5,) for the passage of the connection of the follower *q* with its arm, and there is a spring-catch, *d'*, to hold the follower and arm when charging the tube with primers.

The advantages resulting from the connection and combination of the wedge or its equivalent with the breech-plate are that by one single motion the breech of the barrel is opened for the reception of the charge, and by another single motion the breech-plate is thrown up to close up the breech, and there locked in close contact with the rear end of the barrel to resist the recoil, and that the operation of the mechanism will not be injuriously affected by the expansion and contraction of the parts or by the fouling, for the wedge is entirely behind, and its inclination, compared with its range of motion, is such that any slight variation due to expansion and contraction will not affect its action on the breech-plate, and will under all circumstances hold the breech-plate so effectually against the barrel as not to leave a vent to foul the wedge and its connections.

I do not wish to be understood as limiting myself to the special construction of the parts, as formal changes may be made—such as the substitution of equivalents having the same mode of operation.

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

Opening and closing the rear end of the barrel to insert and inclose the charge by a plate turning on an axis below and in the plane of the rear face of the barrel, substantially as specified, when this is connected and combined with a wedge or its equivalent operated by a lever below, substantially as specified, so that in the act of drawing out the wedge to liberate the breech-plate the rear end of the barrel shall be opened to receive a charge, and by the act of lifting or forcing up the wedge the charge shall be inclosed and the breech-piece secured, while at the same time all the injurious effects of expansion and contraction and of fouling are avoided, as herein set forth.

E. T. STARR.

Witnesses:
WM. H. WINTHROP,
JOEL B. WILSON.