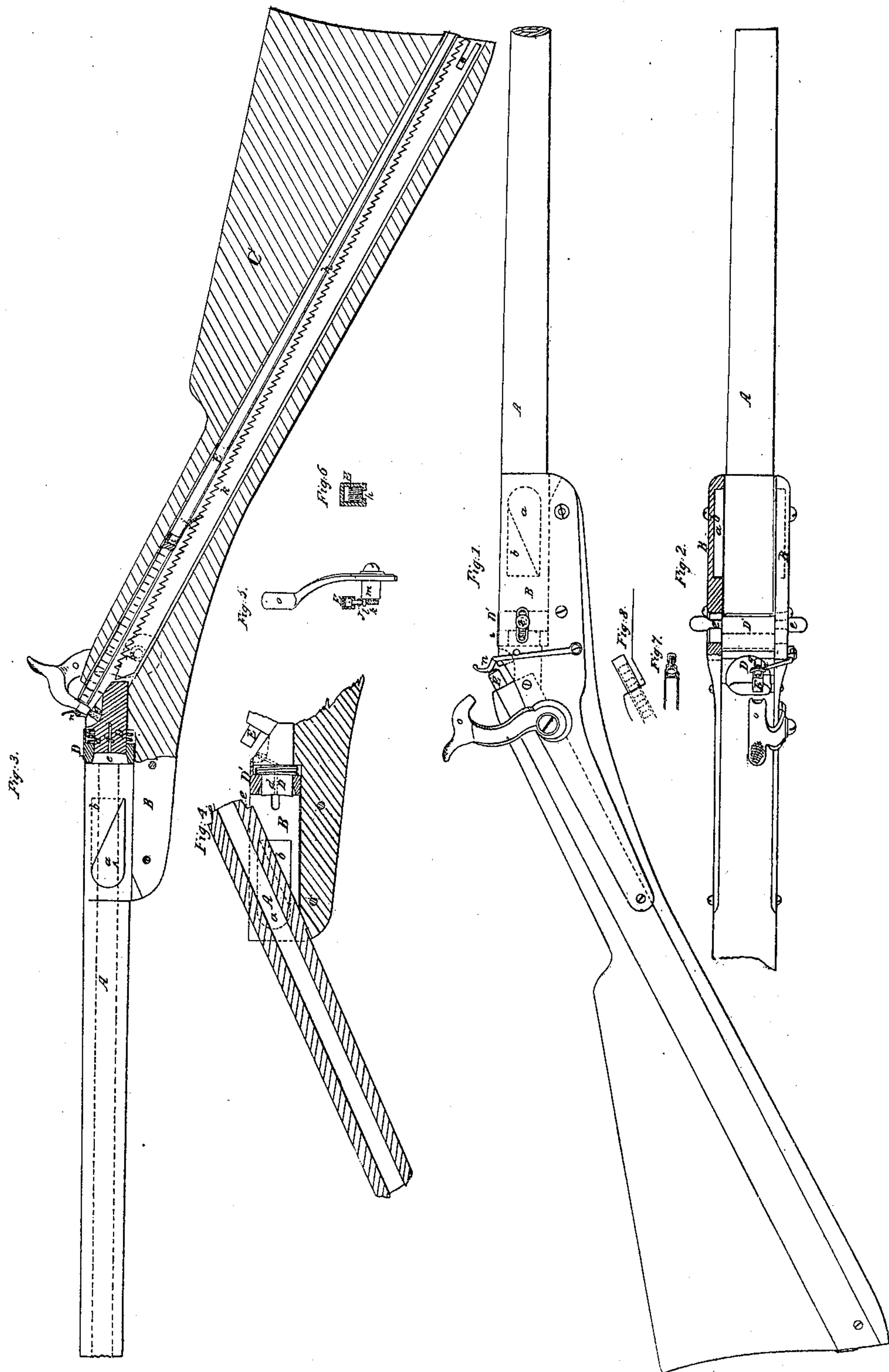


J. C. DAY.
Breech-loading Fire-arm.

No. 11,477.

Patented Aug. 8. 1854.



UNITED STATES PATENT OFFICE.

JOSEPH C. DAY, OF HACKETTSTOWN, NEW JERSEY.

IMPROVEMENT IN FIRE-ARMS.

Specification forming part of Letters Patent No. 11,477, dated August 8, 1854.

To all whom it may concern:

Be it known that I, JOSEPH C. DAY, of Hackettstown, in the county of Warren and State of New Jersey, 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 of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a gun containing all my improvements. Fig. 2 is a top view of the same. Fig. 3 is a side view, showing a longitudinal section of the stock and breech and a side view of the barrel. Fig. 4 exhibits a section of a part of the stock and barrel and a side view of the breech in its place. Fig. 5 is a back view of the cock and tumbler, with a transverse section of the capping-tube, showing the manner in which the feeding-rack by which the caps are supplied is operated. Fig. 6 is a transverse section of the tube which contains the caps. Fig. 7 is a modification of the spring at the mouth of the cap-tube.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates, first, to a certain method of constructing the barrel and connecting it with the stock and breech for the purpose of allowing it to swing and present the rear end of the bore for the reception of the charge.

It relates, secondly, to certain means of making a secure and perfect connection between the rear of the chamber and a fixed breech.

It relates, thirdly, to a certain arrangement whereby the caps are caused to be supplied from a magazine in the stock to the nipple, as required, by the movements of the hammer in cocking and discharging the piece.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the barrel of the gun, and B B are two side plates, which are firmly secured to the stock C, for the purpose of attaching the barrel thereto in such a way that it may raise up the rear end of its bore to receive the charge. The barrel is attached to the side pieces by means of two projections, *a*, one on each side opposite each other, each entering a recess, *b*,

in one of the side plates. The front part of each projection forms more than half a circle, from which it extends backward in the form of a wedge, or in two tangential lines, which meet and form an angle at the back end, as shown in Fig. 3. The front part of each recess corresponds in form with the front of the projection; but it extends backward in two parallel lines to the same length as the projection. The form of the recess is shown in dotted outline in Figs. 1 and 3 and partly dotted and partly in bold outline in Fig. 4. These forms of the projection and recess admit of a limited swinging motion of the barrel, allowing it to change its position from that shown in Figs. 1 and 3 to that shown in Fig. 4, in the former of which positions the bottom projection rests on the bottom of the recess, and in the latter the top of the projection is in contact with the top of the recess. The thickness and depth of the projections and recesses are shown in Fig. 2, where one of the side plates is shown partly in section. The rear end of the barrel is in the form of an arc, described from the axis, passing through the circles of the projections and recesses, which constitutes the axis of oscillation of the barrel, and it fits close up to a stationary breech, D, having a face of corresponding form. The front part, *c*, of the breech is made cylindrical, and the rear end of the barrel has a conical termination, *d*; and to the cylindrical part *c* of the breech and conical part *d* of the barrel is fitted a loose collar, D', which is bored to fit the breech, and conically enlarged in front to receive the rear end of the barrel. This collar secures the barrel in position for firing. The back part, *e*, of the breech may be surrounded by a coiled spring, which will always have a tendency to force the collar D' forward and make a tight joint with the cone *c* of the barrel. The collar has two studs, *e*, one on each side, which pass through slots in the side plates, and are furnished outside with knobs, by which to draw the collar backward to set the barrel free. The vent *f* passes through the center of the breech to the nipple *g*, which is in a recess in the upper part of the rear of the breech. The receptacle for the caps consists of a tube, E, extending straight through the stock from the butt-end to a point above but a little in rear of the nipple, as shown in Fig.

3. The transverse sectional form of this tube is shown in Fig. 6, where it will be seen that its depth is equal to the height of the caps and its width to their diameter, and where it is shown that there is a slot, *h*, in the bottom which extends its whole length. The caps are kept and urged toward the front of the tube by a follower or piston, *i*, (see Fig. 3,) which fits to the tube, and has an elastic tongue, *j*, which passes through the slot *h* into a recess below the tube within the stock, and engages with a ratchet-rod, *k*, which extends as far as the rear of the tube, and is connected by a stud, *l*, with the tumbler *m* above its axis. The teeth of the ratchet are of a pitch corresponding with the diameter of the caps, and thus every time the gun is discharged the descent of the hammer *o* brings forward the ratchet, and thus urges forward the follower a distance equal to the diameter of the caps, and thus forces one cap from the front of the tube, and every time the hammer is drawn back in cocking the receding of the ratchet-bar causes the spring-tongue to pass over a tooth in advance of that by which it was last moved. Each cap, as it emerges from the tube *E*, is brought directly over the nipple, and is driven on the nipple by the same blow of the hammer that explodes it; but previously to its being struck by the hammer it requires to be held in the proper position outside the tube. This is effected by means of a spring, *n*, part of which stands in front of the tube, and as the cap emerges therefrom holds it back against the next one behind it until the hammer strikes. The spring *n* may be variously formed. That which is shown on the gun in the different views is attached to one of the side plates, *B B*, and consists simply of a bent steel rod; but in Fig. 7 a double spring is shown, which is attached to the front of the tube *E* and forms a pair of nippers to receive the cap. The latter form of spring is perhaps the best.

When the gun is required for service, the follower is worked by the ratchet out at the front end of the tube, which is then filled with caps from the rear end and the follower inserted behind them. When it is desired to load the piece, it should be held in the left hand, near the front of the stock, and the collar *D'* requires to be drawn back by the right hand far enough to free the cone *e*, when the greater weight of that portion of the barrel in front of the axis on which it oscillates causes it to descend and throw up the rear

end to the position shown in Fig. 4, when it is ready to receive the charge, which is preferably employed in the form of a cartridge. After the charge is inserted, the rear end of the barrel may be forced down into its place by the fingers of the left hand and the collar *D'* moved forward with the right; or if a spring is applied behind the collar it will be thrown forward by the spring. As the hammer is drawn back to cock it, the ratchet-bar moves back and one tooth passes the spring-catch *j* of the follower, and when the trigger is drawn and the hammer set free the early portion of the descent of the latter moves forward the ratchet-bar and the follower *i* and forces forward all the caps in the tube *E*, forcing out the foremost one, which is prevented from falling by the action of the spring *n*, which holds it till the hammer strikes it down over the nipple and explodes it.

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

1. Connecting the barrel with the stock and stationary breech by means of projections *a a* on its sides, having one part of circular and another part of wedge form, and fitting within recesses *b b* in plates *B B*, or their equivalents, attached to the stock, which said recesses correspond in form with the circular part of the projections, but are wider than the wedge-shaped parts thereof, substantially as described, and thereby admit of a limited swinging movement of the barrel, for the purpose of exposing its rear end, as herein set forth.

2. The sliding collar *D'*, sliding over the stationary breech and the rear end of the barrel, substantially as described, for the purpose of making a close joint between the barrel and breech.

3. Though I do not claim the tube *E*, the piston *i*, ratchet-bar *k*, and spring *n* separately or irrespective of the particular arrangement shown, I do claim their particular arrangement as shown and described, whereby the following results are obtained, viz: first, a sure forward movement of the caps without the assistance of a spiral spring; second, convenience for replenishing the tube without removing it from the stock; and, third, the explosion of a cap already on the nipple without bringing another from the magazine.

JOSEPH C. DAY.

Witnesses:

CHARLES M. TITUS,
ABRAHAM R. DAY.