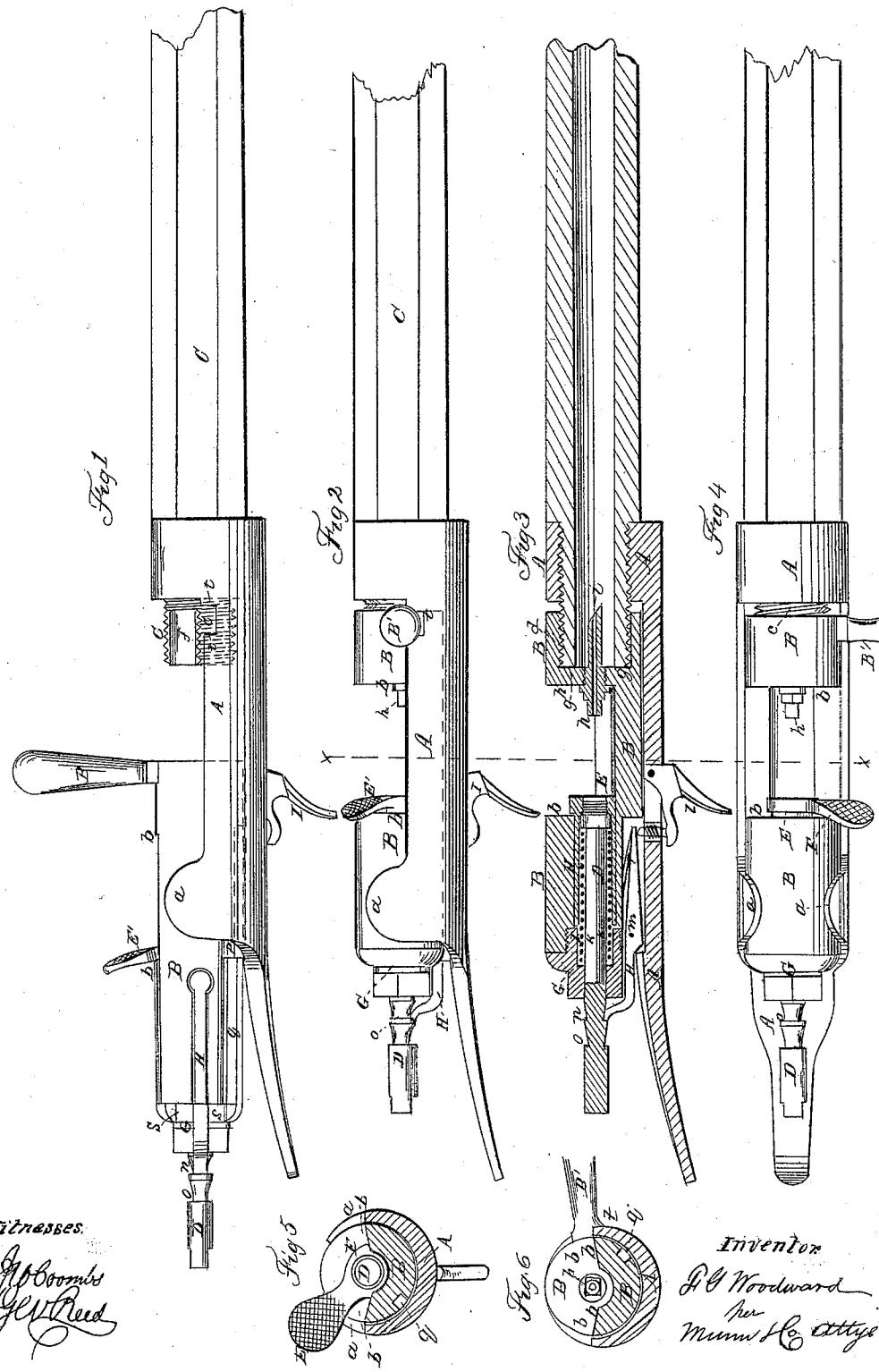


F. G. WOODWARD.

Breech-Loading Fire-Arm.

No. 34,084.

Patented Jan. 7, 1862.



UNITED STATES PATENT OFFICE.

F. G. WOODWARD, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 34,084, dated January 7, 1862.

To all whom it may concern:

Be it known that I, F. G. WOODWARD, of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Breech-Loading 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 the barrel, breech-holder, movable breech-piece, and lock of a rifle with my improvements, showing the breech open for loading. Fig. 2 is a similar view with the exception that the breech is closed. Fig. 3 is a central longitudinal section corresponding with Fig. 2. Fig. 4 is a top view corresponding with Figs. 2 and 3. Figs. 5 and 6 are transverse sections taken in the line $x x$ of Figs. 2, 3, and 4, Fig. 5 showing the parts on one side and Fig. 6 those on the other side of said line.

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

This invention consists in an improved construction of and mode of applying the movable breech-piece, and arrangement of the parts of the lock in combination therewith, whereby I obtain an effective and convenient breech-loading fire-arm of very simple construction.

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

A is the breech-holder, the front portion of which is made of cylindrical form for the reception of the rear end of the barrel C, and the remainder of which is made of semi-cylindrical form for the greater portion of its length, to constitute a seat for the reception of the movable breech-piece B, but with lips $a a$ at its rear end, to lap sufficiently over B to keep it in its place. This breech-holder being secured to the stock by screws serves to attach the stock to the fire-arm.

The movable breech-piece B is composed of a piece of steel whose exterior is of the form of a cylinder, having in one side a deep recess, $b b$, and in its front portion is bored out to within a short distance from the said recess, the bottom g of this bore constituting the face of the breech; and the so-bored portion of the breech-piece has cut in it a female screw-thread, d , Fig. 3, which fits to a male screw-thread, c , Fig.

1, cut on the exterior of the rear portion of the barrel, which protrudes through the rear of the cylindrical portion of the breech-holder B, and into the semi-cylindrical portion thereof. These screw-threads are each cut away in segments, as shown at f in Fig. 1, so that the hollow front portion of the breech-piece may pass directly forward over the protruding rear portion of the barrel, to bring the face g in contact with the rear end of the barrel, so that by turning the breech-piece a short distance in its seat and upon the thread c the face g may be brought up so tight against the barrel as to prevent leakage. From the center of the face g to the recess $b b$ a hole is drilled for the reception of the nipple h and cartridge-perforator i , which are made in one piece, the nipple projecting into the recess $b b$. The rear portion of the breech-piece back of the recess $b b$ is bored centrally throughout for the reception of the sliding plunger or hammer D and mainspring k , the mainspring being coiled around the hammer, and within a cylindrical shell, E, which is secured to the hammer at the front end thereof, the said shell fitting to the bore of the breech-piece and having a thumb-piece, E', at its front end, which works within the recess $b b$ of the breech-holder. The bottom of this recess $b b$ conforms to and forms a continuation of the lower part of the last-mentioned bore of the breech-piece. The breech-piece is fitted at its rear end with a screw-cap, G, which provides for the introduction of the mainspring, and confines the said spring in place and forms its bearing; and the hammer protrudes through this cap for the purpose of being engaged by the sear H, which is partly arranged in a groove in the exterior of the breech-piece and secured thereto by its fulcrum-pin m .

p , Fig. 3, is the sear-spring, and $n o$ are the cock and half-cock notches formed in the hammer by turning.

In the lower part of the exterior of the breech-piece B there is a straight groove, q , parallel with the axis, to run on a guide-stud, r , on the breech-holder A, for the purpose of guiding the breech in its movements toward and from the barrel, to close and open the latter, said groove and pin keeping the segments of the female screw-thread d in the breech-piece opposite the segmental recesses cut in the male screw-thread c of the barrel. On one side of

this groove, and at the rear end thereof, there is a recess, *s*, cut part of the way round the cap *G*, to allow the breech-piece to be turned for screwing it up to the barrel. The handle *B'*, provided on the front part of the breech-piece, for convenience of working it, has provided for it in the right-hand side of the breech-holder *A* a notch, *t*, into which it enters for the purpose of locking the breech-piece when the latter is screwed up tight.

I is the trigger working through a slot in the bottom of the breech-holder, and operating, when pulled, to press up the front end of the sear and draw the rear end from the hammer-notch.

To load the gun, the handle *B'* is turned upward from the notch *t* to unscrew the breech-piece *B*, and then pulled back to draw back the breech-piece as far as permitted by the groove *g* and stud *r*, and the cartridge is then inserted at the rear opening of the barrel. The handle *B'* is then pushed forward to bring the breech-piece up to the barrel, and afterward turned down into the notch *t* to screw up and lock the breech-piece.

The cocking of the hammer is effected by pressing back the thumb-piece *E'*.

I do not claim, separately, either the segment-screw connection between the movable breech-piece and the barrel, or the central sliding or plunger-like hammer sliding through the movable breech-piece; but

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

The movable breech-piece *B*, constructed with a recess, *b b*, groove *g*, and recess *s*, fitted with a hammer, *D*, mainspring *k*, sear *H*, and handle *B'*, and having a segment-screw connection with the breech, all substantially as herein described, and applied to operate in combination with the trigger *I* and with notch *t* and stud *r* of the breech-supporter, substantially as herein set forth.

F. G. WOODWARD.

Witnesses:

A. DADMUN,
D. L. MORRIL.