E. S. PIPER.

Breech-Loading Fire-Arm.

No. 51,391. Patented Dec. 5, 1865.

Fig: 1

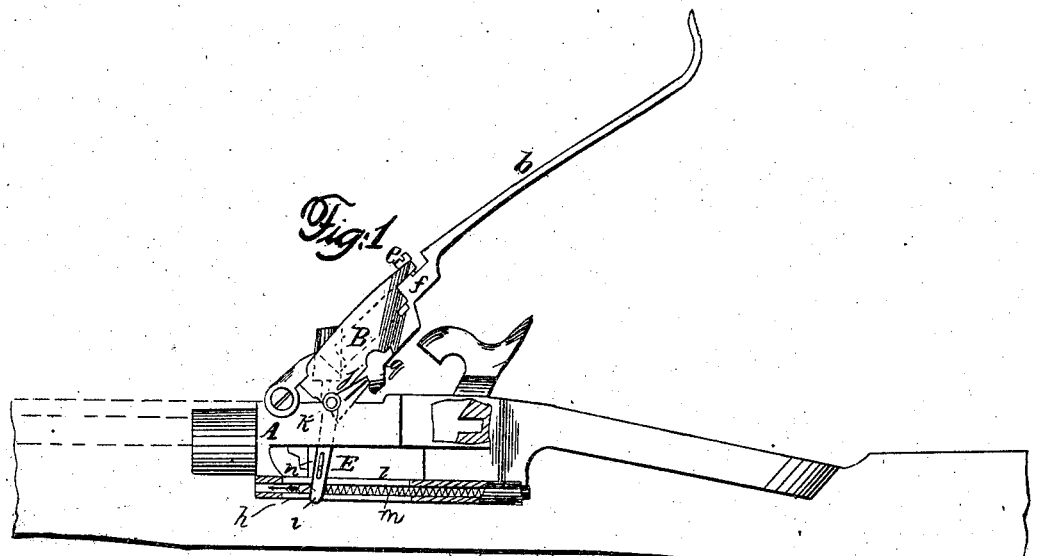


Fig: 2

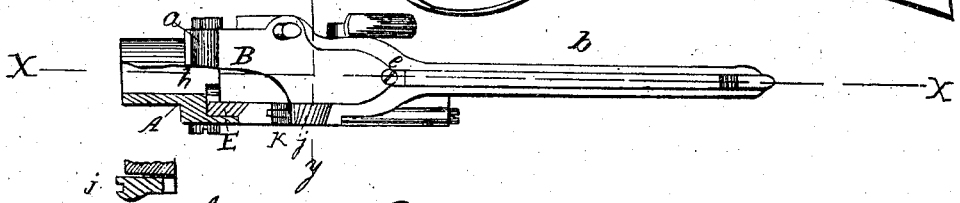


Fig: 4

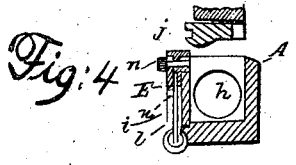
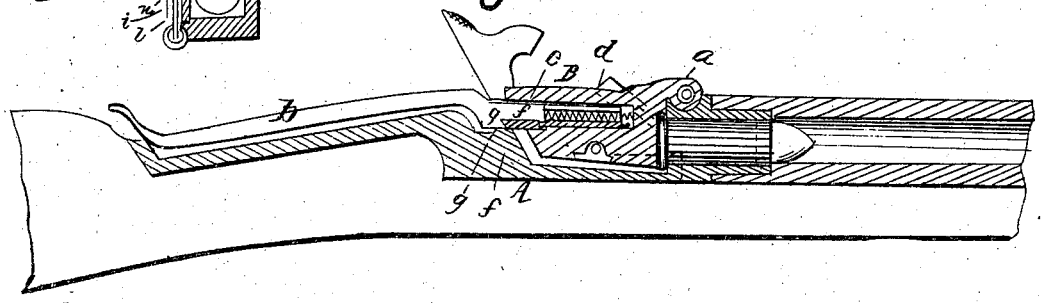


Fig: 3



Witnesses
Theo Tusch
Wm Drewry

Inventor
E S Piper
per Munn & Co
attorneys

UNITED STATES PATENT OFFICE.

EDWIN S. PIPER, OF SPRINGFIELD, ASSIGNOR TO JOSIAH HOWE, OF SPRINGFIELD, MASS., AND HENRY M. JACOBS, OF HARTFORD, CONN.

IMPROVEMENT IN CARTRIDGE-RETRACTORS FOR BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **51,391**, dated December 5, 1865.

To all whom it may concern:

Be it known that I, EDWIN S. PIPER, of Springfield, in the county of Hampden 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 thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a sectional side elevation of this invention. Fig. 2 is a plan or top view of the same. Fig. 3 is a longitudinal vertical section of the same, the line *x x*, Fig. 2, indicating the plane of section and looking in the direction of the arrow marked opposite to that line. Fig. 4 is a transverse section of the same, taken in the plane indicated by the line *y y*, Fig. 2.

Similar letters of reference indicate like parts.

This invention consists in an elbow-lever which has its fulcrum on a pivot secured in the frame, and one arm of which is slotted and catches over a pin projecting from a spring-slide provided with a lip for the purpose of ejecting the empty cartridges, whereas the other arm of said elbow-lever is exposed to the action of a spring-latch secured to the under surface of the vertically-swinging breech-block in such a manner that whenever said breech-block is raised or swung open and before it reaches its highest point the latch engages with the elbow-lever and acts on the cartridge-ejector, causing the same to extract the cartridge; and as the breech-block is raised still higher the spring-latch releases the elbow-lever and allows the cartridge-ejector to fly back to its original position, thus offering no obstacle to the introduction of a new cartridge.

A represents the breech of an ordinary Springfield musket, which is cut open to receive the swinging breech-block B. This breech-block is connected to the frame or breech by a hinge-joint, *a*, in such a manner that it swings up and down in a vertical plane, as shown in Fig. 1 of the drawings, or that it can be closed down, as shown in Fig. 3. This breech-block is operated by a lever, *b*, which extends from its rear end, and which is connected to said breech-block by a round arm fitted into a corresponding socket, *c*, in the breech-block, as clearly shown in Fig. 3. A spiral spring, *d*, inserted into the socket *c*, has a tendency to force the lever *b* back, and a set-screw, *e*, which drops into a recess in the upper edge of the lever, prevents the same from flying back any farther than desirable or from coming out of the socket *c* altogether. Said lever is furnished with a lip, *f*, and if the breech-block is closed down this lip catches in a recess, *g*, in the frame and the breech-block is locked. By pushing the lever forward against the action of the spring *d* the lip *f* is made to clear the recess *g* and the breech-block is free to be thrown open.

The breech-block, it will be noticed, is so formed that when the same is closed the appearance of the musket is the same as that of an ordinary Springfield musket, and the mechanism of the lock requires no alteration.

E is the cartridge-ejector, which consists of a slide fitted into a recess in the side of the frame A, and which is provided with a lip, *h*, that catches under the head or flange of the cartridge and ejects the same from the barrel whenever a backward motion is imparted to the slide. Said ejector is operated by means of an elbow-lever, *i j*, which has its fulcrum on a pivot, *k*, secured in the frame. The arm *i* of said lever extends down into a tube, *l*, which incloses a spring, *m*, that has a tendency to force said arm in the direction of the arrow marked near it in Fig. 1.

A pin, *n*, secured in the outer surface of the ejector, projects through a slot, *p*, in the arm *i* of the elbow-lever, and any motion imparted to said elbow-lever is thereby transmitted to the ejector.

The arm *j* of the elbow-lever *i j* bears on the upper edge of the frame A, being flush with the inner and outer surfaces of said frame, and a recess in the frame under the inner edge of the arm *j* enables the spring-latch *g* to catch under said arm and to impart the requisite motion to the cartridge-ejector whenever the breech-block is thrown open.

The latch *g* is secured to the under surface of the breech-block, and its front edge is beveled and formed in such a manner that in depressing the breech-block said latch is forced back against the action of a spring, *r*, (see Fig. 4,)

and as soon as it passes the edge of the arm *j* it springs out and catches under said arm ready to act on it whenever the breech-block is raised. As the breech-block is being raised the cartridge-ejector is forced back, and the cartridge or the shell which happens to be in the barrel is forced out; but after the breech-block has been raised to a certain height the latch *g* releases the arm *j* of the elbow-lever *i j*, so as to allow the ejector to fly back to its original position, where it offers no obstruction to the introduction of a new cartridge.

By this arrangement the conversion of an ordinary Springfield musket into a breech-loading rifle is rendered easy and practicable, and a rifle is obtained which is not liable to get out of order, which can be loaded with great rapidity, and which is so simple that it can be operated without paying much attention to the mechanism.

I claim as new and desire to secure by Letters Patent—

The elbow-lever *i j* and spring *m*, in combination with the ejector E, spring-latch *g*, and vertically-swinging breech-block B, constructed and operating substantially as and for the purpose described.

EDWIN S. PIPER.

Witnesses:
A. T. FOLSOM,
HENRY M. JACOBS.