

J. GRAY.  
CARTRIDGE RETRACTOR FOR BREECH LOADING FIREARMS.

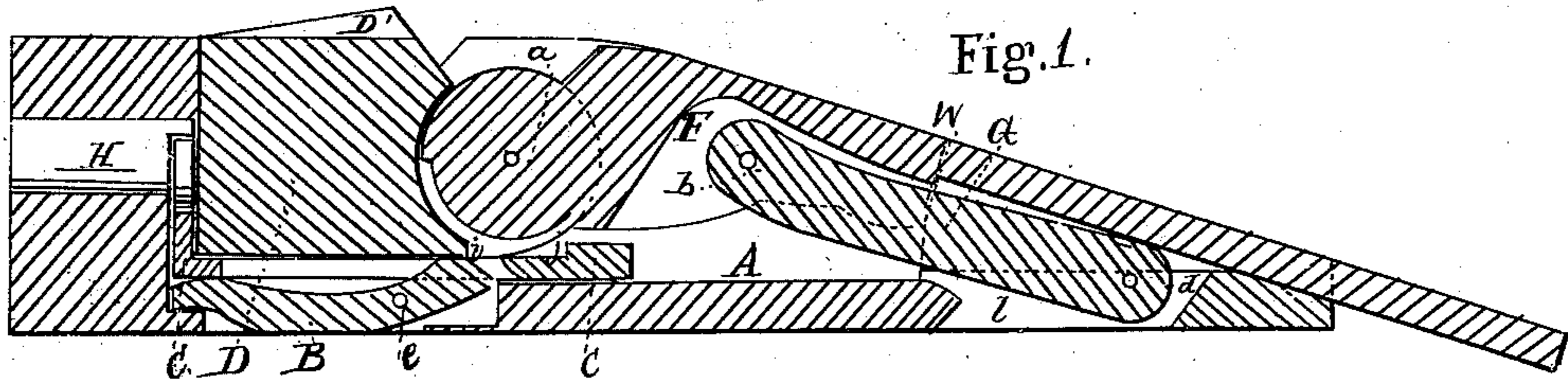


Fig. 6.

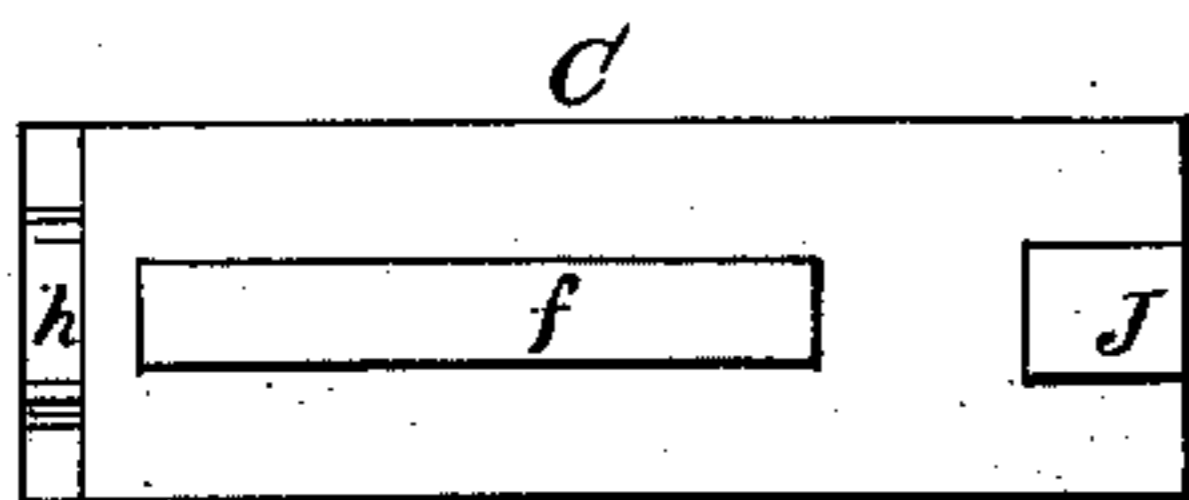


Fig. 7.

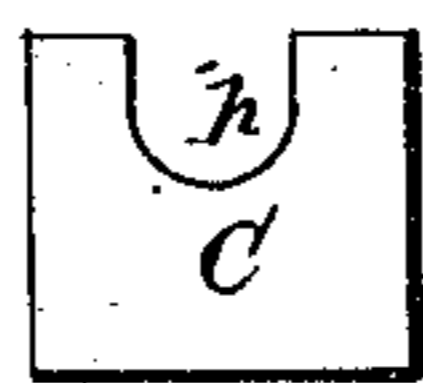


Fig. 5.

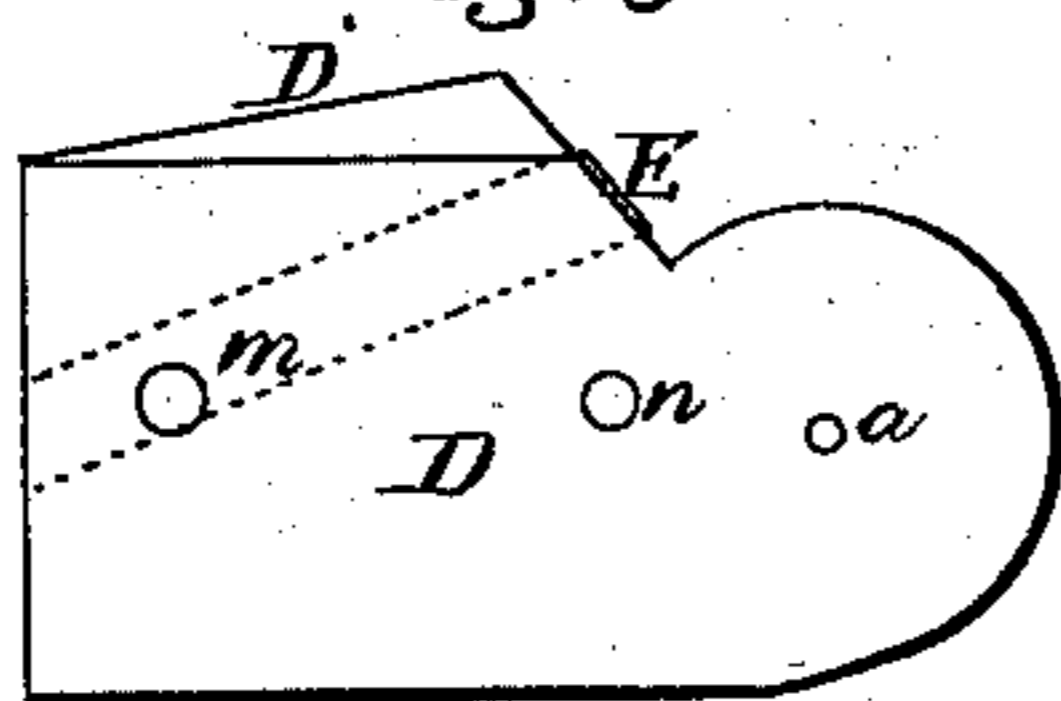


Fig. 2.

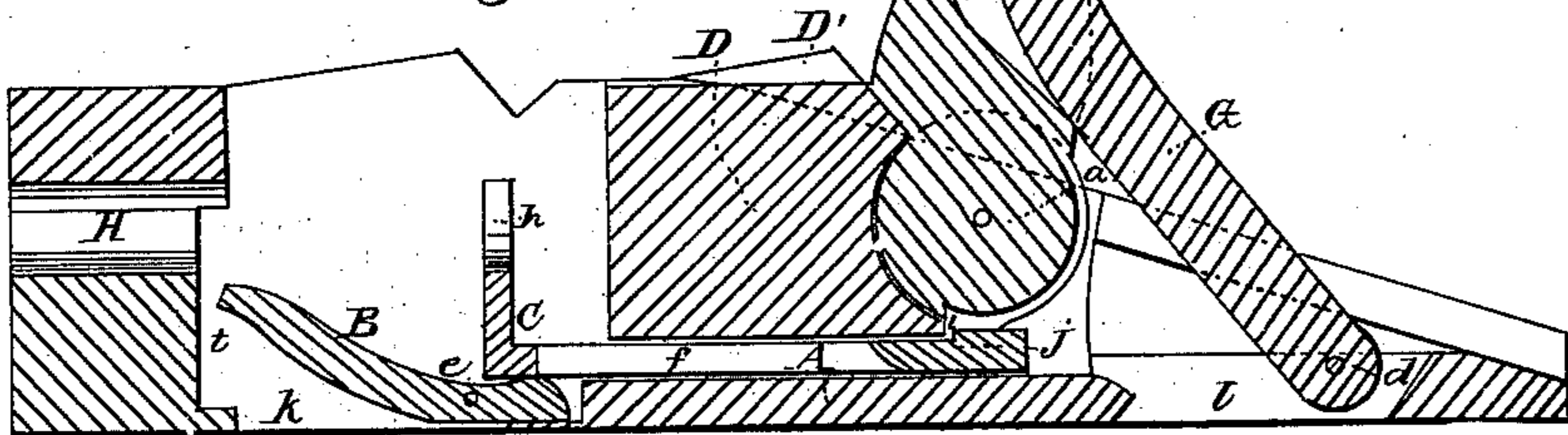


Fig. 4.

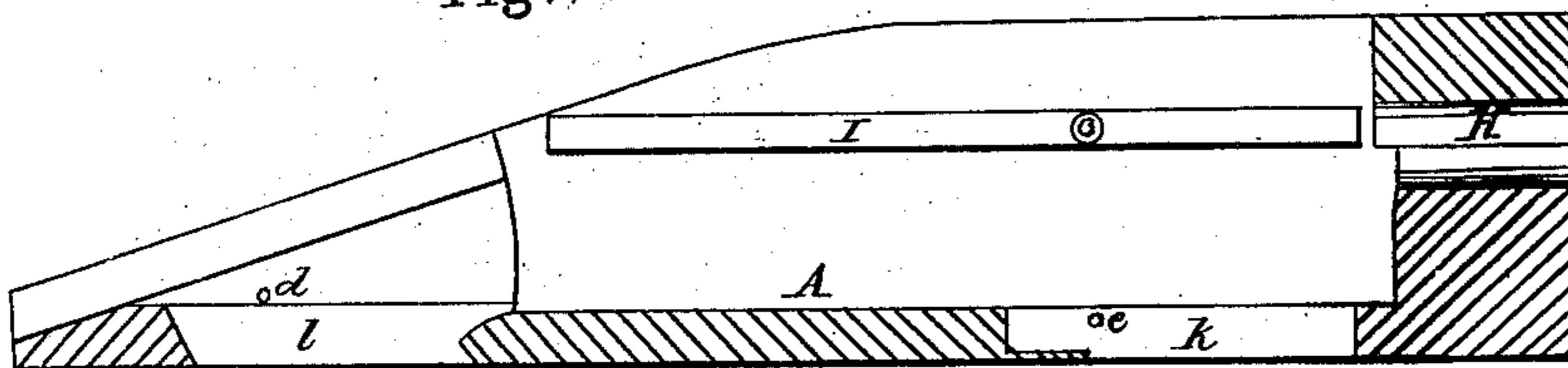
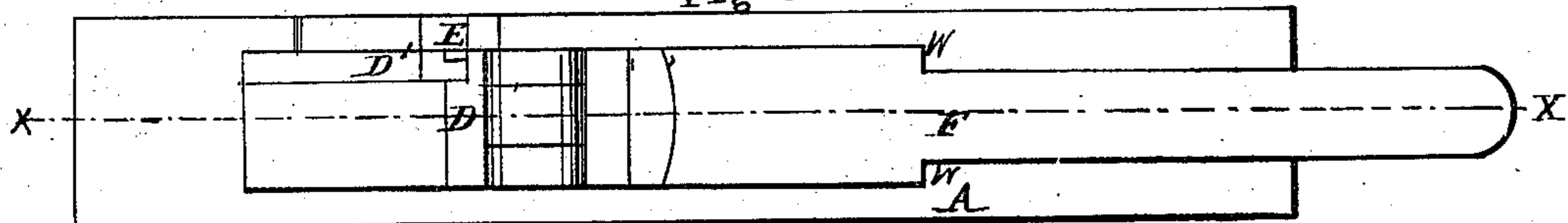


Fig. 3.



Witnesses:

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*W. Blanchard*

Inventor:

*Joshua Gray*

# UNITED STATES PATENT OFFICE.

JOSHUA GRAY, OF MEDFORD, MASS., ASSIGNOR TO HIMSELF, E. H. ELDREDGE,  
OF BOSTON, MASS., AND S. S. BUCKLIN, OF PROVIDENCE, R. I.

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

Specification forming part of Letters Patent No. 48,337, dated June 20, 1865.

*To all whom it may concern:*

Be it known that I, JOSHUA GRAY, of Medford, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Breech-Loading Rifles; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal central section through a portion of the receiver in the line *x* of Fig. 3, representing the breech-pin and the other parts to which my improvements relate in the position assumed by them when the rifle is ready to be discharged. Fig. 2 is a similar view of the same, representing the breech-pin drawn back for the insertion of a cartridge. Fig. 3 is a top view of Fig. 1. Fig. 4 is a plan of one of the inner sides of the receiver, showing the slot *I* in which the guide-pins *m n* of the breech-pin slide. Fig. 5 is a side elevation of the breech-pin detached. Fig. 6 is a plan of the cartridge-extractor detached, and Fig. 7 is an elevation of the front end of the same.

Like parts are indicated by the same letters in all the drawings.

My present invention is intended more especially for making what are known as the "Springfield rifles" into breech-loaders; and its nature consists, first, in the peculiar construction and arrangement of the cartridge-extractor *C*; second, in the peculiar construction and arrangement of the cartridge guide and expeller *B*.

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

*A* is the receiver, the shape and size of which are clearly shown in the first three figures. This receiver-slot is of such a nature that it can by the proper devices be very cheaply and readily made in the common muzzle-loading Springfield rifle or any other of a similar construction.

*D* is the breech-pin, the size, shape, and construction of which are clearly shown in Figs. 2 and 3. Projecting from one side of the breech-pin are two guide-pins, *m n*, (see Fig. 5,) which are intended to slide in the groove *I* (see Fig.

4) in one side of the receiver, whereby the breech-pin is always kept in a direct line with the barrel *H*. These pins *m* and *n* are inserted through the hole *o* (see Fig. 4) in the side of the receiver.

*F* is a lever, one end of which is attached to the back end of the breech-pin by means of the pivot *a*, as shown in Figs. 2 and 3.

*G* is a link, one end of which is attached to the receiver in the slot *l* by the pivot *d* and the other to the lever *F* by the pin *b*, as represented in Figs. 1 and 2. On each side of the lever *F* are shoulders or abutments *ww*, which, when the breech-pin is in the position represented in Fig. 1, come in contact with corresponding shoulders in the receiver, by means of which it is obvious that the breech-pin will be held firmly against the barrel. On the top of the breech-pin is a raised incline, *D'*, for the purpose described above.

*C* is the sliding cartridge-extractor, which consists of a flat strip of metal, the front end of which is turned up at a right angle and provided with a semicircular hole, *h*, the back end having a start, *j*, while the bottom is provided with a slot, *f*. (See Fig. 6.) This extractor is laid upon the bottom of the receiver-slot and the breech-pin placed upon it between the front end and the start *j*. The extractor is thrown forward into the recess *t*, as represented in Fig. 1, by the forward end of the breech-pin, and thrown back into the position shown in Fig. 2 by the lower corner, *i*, of the breech-pin striking against the start *j*.

*B* is a lever, shaped as shown in Figs. 1 and 2, and confined in the slot *k* in the bottom of the receiver by means of the pivot *e*. This lever is held in the position represented in Fig. 2 by the front end of the extractor *C*, and when in this position its upper edge operates as a guide for the cartridge into the barrel *H*. When the breech-pin is driven forward into the position shown in Fig. 1 the guide *B* is thrown down by the forward end of the extractor *C* into the slot *k*. After a metallic-cased cartridge has been fired the case is withdrawn by the front end of the extractor, being more than half encircled by the semicircular slot *h*. It is also simultaneously thrown upward and out of the receiver by the sudden rising of the front end of the lever *B*.

To insert a cartridge in the barrel *H*, the

breech-pin is drawn into the position shown in Fig. 2, and the cartridge is laid, right end forward, onto the guide-lever B, when the lever F will be brought down into the position shown in Fig. 2, and the cartridge will be driven by the front of the breech-pin into the barrel.

Having thus described the nature of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The cartridge-extractor C, provided with

the slot *f*, in combination with the guide and expeller B, substantially as and for the purpose described.

2. The sliding breech-pin D, extractor C, and guide and expeller B, when constructed, combined, and operating substantially as described.

JOSHUA GRAY.

Witnesses:

N. AMES,

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