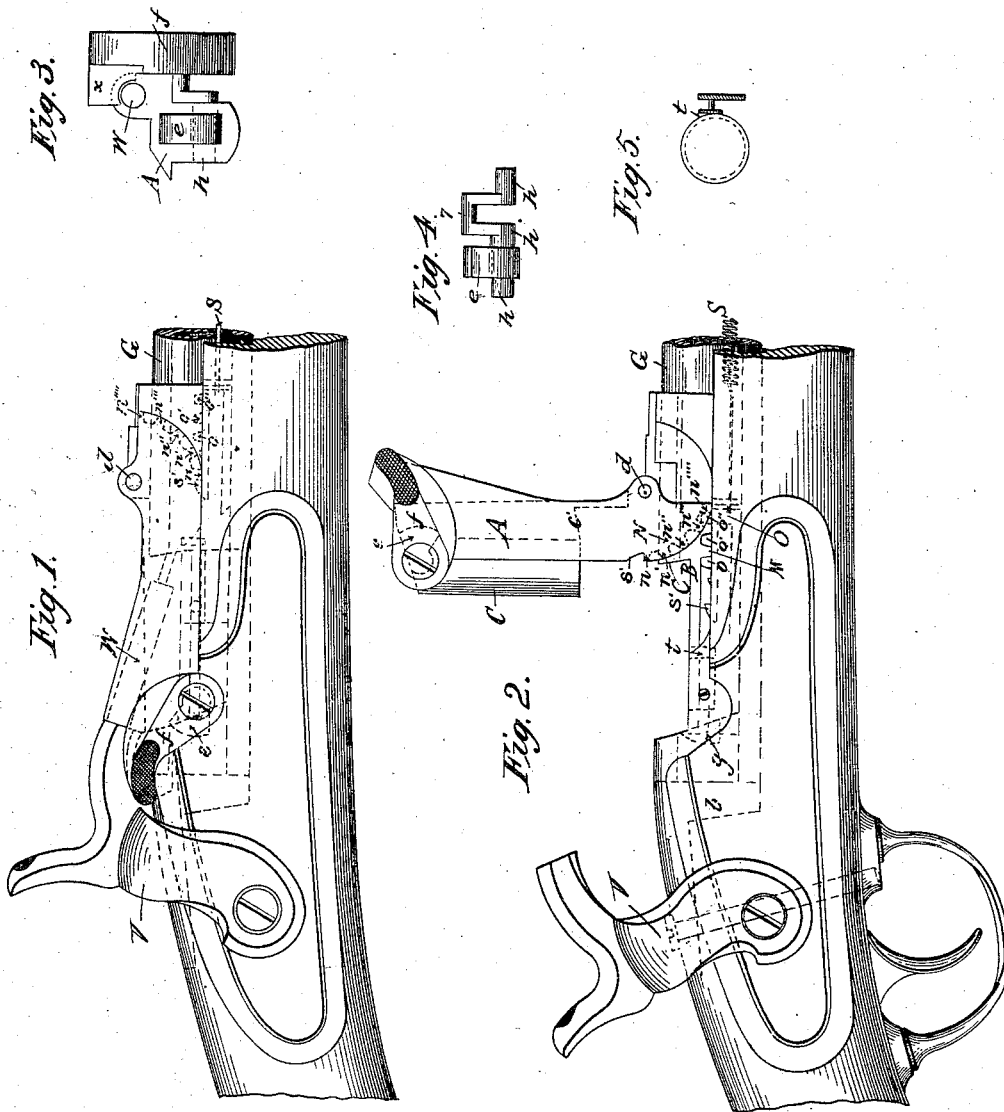


E. S. ALLIN.
BREECH LOADING FIREARM.

No. 49,959.

Patented Sept. 19, 1865.



Witnesses:
J. R. Gardner
Walter R. Paul

Inventor:
E. S. Allin

UNITED STATES PATENT OFFICE.

E. S. ALLIN, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 49,959, dated September 19, 1865.

To all whom it may concern:

Be it known that I, ERSKINE S. ALLIN, of Springfield, Hampden county, Commonwealth of Massachusetts, have invented certain Improvements in Fire-Arms; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention belongs to that class of fire-arms known as "single-breech loaders" using the metallic cartridge.

I will first describe its construction, and next its operation, and, finally, show some of its advantages over others of the same class.

In the drawings, Figure 1 is a side view of a portion of my gun near the breech, showing it closed in the act of firing. Fig. 2 is a side view of the same, showing the recoil-block A thereon up so as to admit the cartridge into the bore of the gun at B. Fig. 3 is a rear view of the recoil-block A. Fig. 4 shows the cam-shaft in the rear end of the recoil-block. Fig. 5 shows a section of the cartridge-shell extractor.

To the barrel G, I attach, by means of the joint *a*, the recoil-block A, which swings in *a*, and when opened, as shown in Fig. 2, exposes the rear end of the bore of the barrel to admit the cartridge, and when closed the part C completely fills up the space between the end of the cartridge and the breech-pin *c*. It will be seen that the part C of the barrel is beveled, and the part C of the block is also beveled to fit in the place, so that when the block is down it forms a dovetail joint at the front end with the barrel, thus preventing it from being lifted out at the end, even though the pin *d* be removed. This block A is also fastened at the rear end by the cam *e*, turned by the short lever F at the side, this cam fitting into a recess cut in the breech-pin *b* to receive it, thus completely fastening in the recoil-block A. The shaft *h*, in which the cam *e* turns, is raised up at C in form of a crank, so as to pass over the side of the barrel.

I will now describe the construction of the cartridge-shell extractor.

To the recoil-block A, at N, I attach a part of a gear or pinion formed by cutting several

teeth, *n n*, &c., in the inside of N. These teeth of the pinion fit in similar teeth of a rack, M, at the side, having teeth *o o*, &c. To this rack the cartridge-shell extractor M is attached.

I will now describe the operation of my invention.

We will suppose the gun fired and the shell of the metallic cartridge remaining in it. It is desired to remove the shell to allow another cartridge to be placed in the bore at B. The gun being cocked, the piece A is raised by turning the lever *f* up, thus releasing the rear end piece. A is raised up, the notch *s* in it acts on the spring-tooth *s*, and carries forward the rack M, so that the gear-teeth *n n*, &c., may catch in the rack and draw back the shell-extractor. This (the shell-extractor) is arranged as shown in Fig. 5, the part *t* fitting behind the rim of the cartridge-shell, and as it is moved back takes the shell along with it. As the block A is raised farther the last tooth of the pinion slips off from the rack and the spring *s* pulls the rack forward to its former position.

I wish to call particular attention to the arrangement for throwing the pinion *n* into gear with the rack M. This is accomplished by means of the spring-tooth S, which springs into the notch *s*, and as the block A is raised again the rack is drawn forward into gear with the pinion, as before described. The block A being raised, as shown in Fig. 2, a cartridge is inserted into the bore of the gun. It will be seen that it is not necessary that the cartridge should be pressed up entirely to its place, as the part C of A in coming down will force it into its place, even though the end of it should be half an inch back from its proper position. As the part C of A comes down it forces in the cartridge and the front end blocks at C, as before described, and the lever *f* is turned down. This brings the cam *e* into the recess *g* in *b*, thus holding A securely in its place. If by any accident the lever *f* should not be turned down, it is impossible to fire the gun, for the hammer V in coming down will strike the projection in *f* and throw it up against A, as shown in Fig. 3, thus effectually preventing the hammer from striking the pin U, which communicates with the cartridge, as shown in Fig. 1; or, if *f* should be turned down part way and

not entirely, the hammer in coming down strikes over the projections *x* and forces it to its place, locking A.

I will now state some of the advantages of this arrangement.

First. It is very easy of operation, it being only necessary to cock the gun, raise A, which removes the shell, and insert a cartridge and close A, and it is ready for firing.

Second. It is impossible to blow the piece A open, it being fastened in at each end, as described. It will lessen the danger, in this connection, that it does not depend at all upon the pin *d*, as this may be taken out without rendering the gun useless or dangerous, as a solid block, C, is interposed between the breech-pin and the end of the cartridge in a direct line.

Third. It is impossible to fire the gun unless its working parts are in relative position for firing, as before described.

Fourth. The cartridge is not required to be pressed entirely to its place, as already described, which saves much care and attention in loading and firing rapidly.

Fifth. It is very simple, compact, and positive in its movements, and not liable to get out of order.

Sixth. It is particularly adapted to the alteration of the Springfield rifle-musket, (or any other,) as it can be done without changing the feature of the musket or without throwing away any of its parts. All that is necessary is to cut away the barrel on the top at the breech and add the part A and shell-pulley, cut the recess in the breech-screw, and modify the hammer. All other parts remain the same.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a solid recoil-block, A, with a pinion, N, and rack M, the first tooth, *s*, of which is hung on a spring, in the manner and for the purpose described.

2. Beveling the front end of the recoil-block at *c'* and forming a corresponding bevel, *c*, on the barrel, as and for the purpose described.

3. The projection *x*, in combination with the lever *f* and hammer V, substantially in the manner and for the purpose described.

E. S. ALLIN.

Witnesses:

MILTON BRADLEY,
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