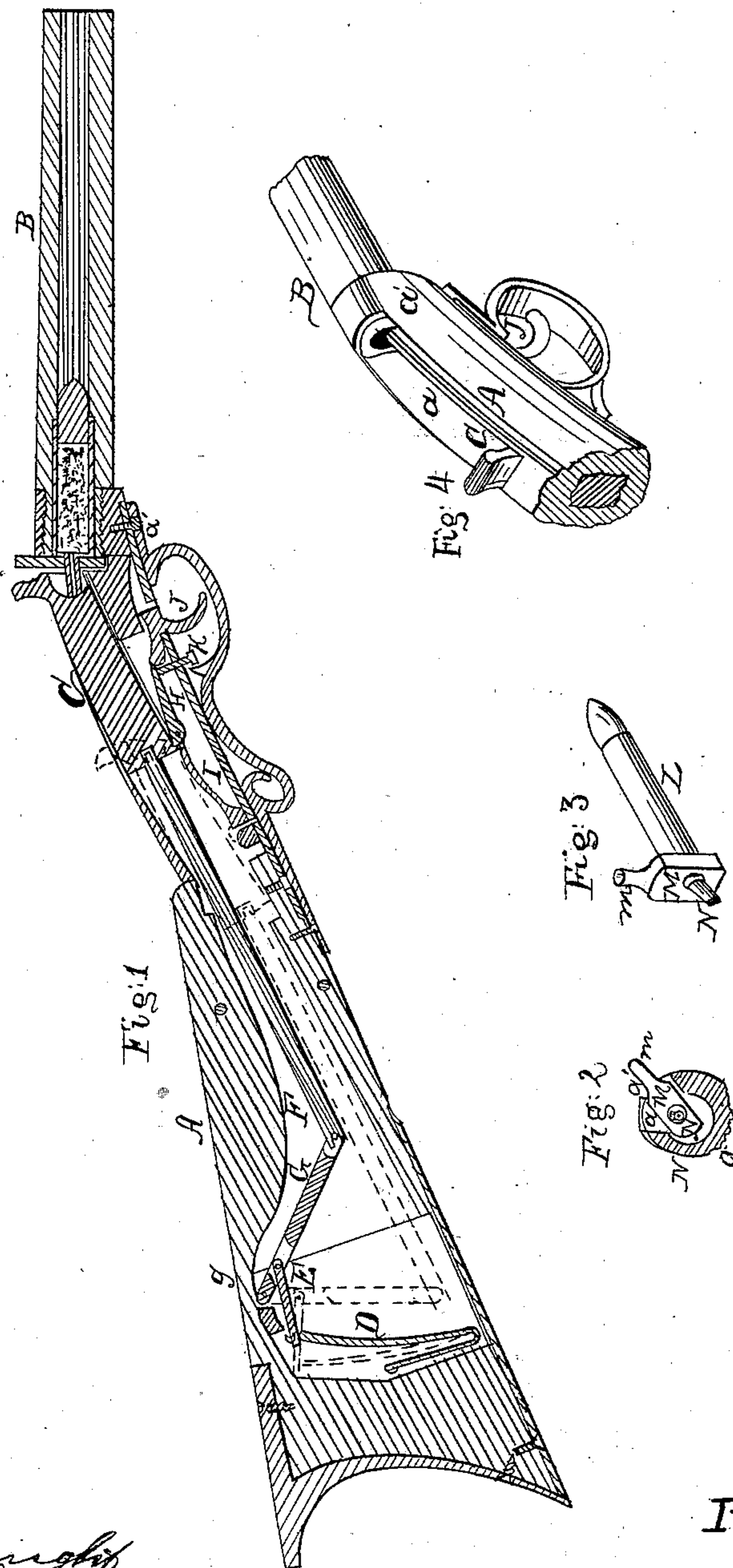


O. D. LULL.  
Breech-Loading Fire-Arm.

No. 38,903.

Patented June 16, 1863.



Witnesses

*Octavius Dyer*  
*Charles Smith*

Inventor

*Orrin D. Lull*



# UNITED STATES PATENT OFFICE.

ORRIN D. LULL, OF WATKINS, NEW YORK.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 38,903, dated June 16, 1863.

*To all whom it may concern:*

Be it known that I, ORRIN D. LULL, of Watkins, in the county of Schuyler and State of New York, have invented a certain new and useful Improvement in Breech-Loading Fire-Arms; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical longitudinal section of my improved arm. Fig. 2 is a transverse section of the same at  $x x$ , Fig. 1. Fig. 3 is a perspective view of the cartridge-case. Fig. 4 is a perspective view of the breech without the cartridge.

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

My said invention consists, first, in an improved mode of applying and securing a movable cartridge-case; second, in an improved construction of lock.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

The barrel B is bored completely through from end to end, and is rigidly secured to the stock A, the latter being formed with a slot or cavity,  $a$ , through which access is afforded to the rear of the bore.

C is a sliding hammer working in the slot  $a$ , and driven forward by a spring, D, through the medium of rods E F and lever G. The lever G is fulcrumed at  $g$ , the rod E extends from the upper end of the spring to any suitable attachment near the upper end of the lever G, and the rod F extends from the lower end of the lever G to the rear of the hammer C.

In Fig. 1 the forward positions of the hammer, spring, and connections are represented in full lines and the retracted positions in red outline. Fig. 4 shows the hammer retracted and the gun ready for the insertion of the cartridge.

H is a dog pressed upward at its rear end by a spring, I, to hold the hammer in its retracted position, and thrown upward at its front end by the trigger J, in customary manner, when the hammer is to be released.

K is a set-screw, which, by limiting the de-

scant of the forward end of the dog, may limit the hold of the rear end upon the hammer, and thus render the action of the trigger as delicate as desired.

The cartridge used with my improved arm is formed of a cylindrical metallic case, L, open in front for the reception of powder and ball and firmly attached at its rear end to a flange or plate, M, which is adapted to fit in a lateral enlargement or cavity,  $a'$ , and provided with a projection or handle,  $m$ , for inserting and securing the cartridge in the gun and releasing and removing the empty case therefrom in manner hereinafter explained. The nipple N projects backward and slightly downward in proper position to be struck by the concave front of the hammer C.

O represents powder within the case L.

P represents the ball, which, being firmly inserted in the end of the case, together with a suitable patch, effectually prevents the escape of powder.

Operation: The cartridge-case being thus charged and a cap placed upon the nipple N, the hammer is retracted, as shown in Fig. 4, and the cartridge inserted, with the plate M in a vertical position. The cartridge is then turned on its axis by means of the handle  $m$  to the position shown in Fig. 2, so as to be held from longitudinal displacement by the plate M, fitting in the annular cavity  $a'$ , the rear side of which cavity constitutes a firm longitudinal bearing for the cartridge on both sides of the bore, to resist the force of the explosion. The piece is then ready for firing. The hammer, being released in customary manner by pulling the trigger, is thrown forward with a very rapid motion by the interposition of the lever G, and the explosion of the cap is thus rendered certain without such pressure against the hammer as to render it difficult of retraction. If the bore be slightly tapered forward, the expanding gases will carry the patch forward, together with the ball, in such manner as to prevent contact of the lead with the rifles of the gun.

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

1. The cartridge L M, constructed substantially as set forth in the described combination, with the longitudinally sliding hammer  $c$ ,

open barrel B, longitudinal slot *a*, and lateral *a'*, arranged to operate as explained.

2. The combination of the sliding hammer C, spring D, rods EF, and lever G, constructed, arranged, and operating as described, in connection with the cylindrical metallic cartridge L M and longitudinal nipple N.

3. The specific arrangement of the dog H, spring I, trigger J, and set-screw K, in combination with the sliding hammer C.

ORRIN D. LULL.

Witnesses:

CHARLES SMITH,  
JAMES H. GRIDLEY.