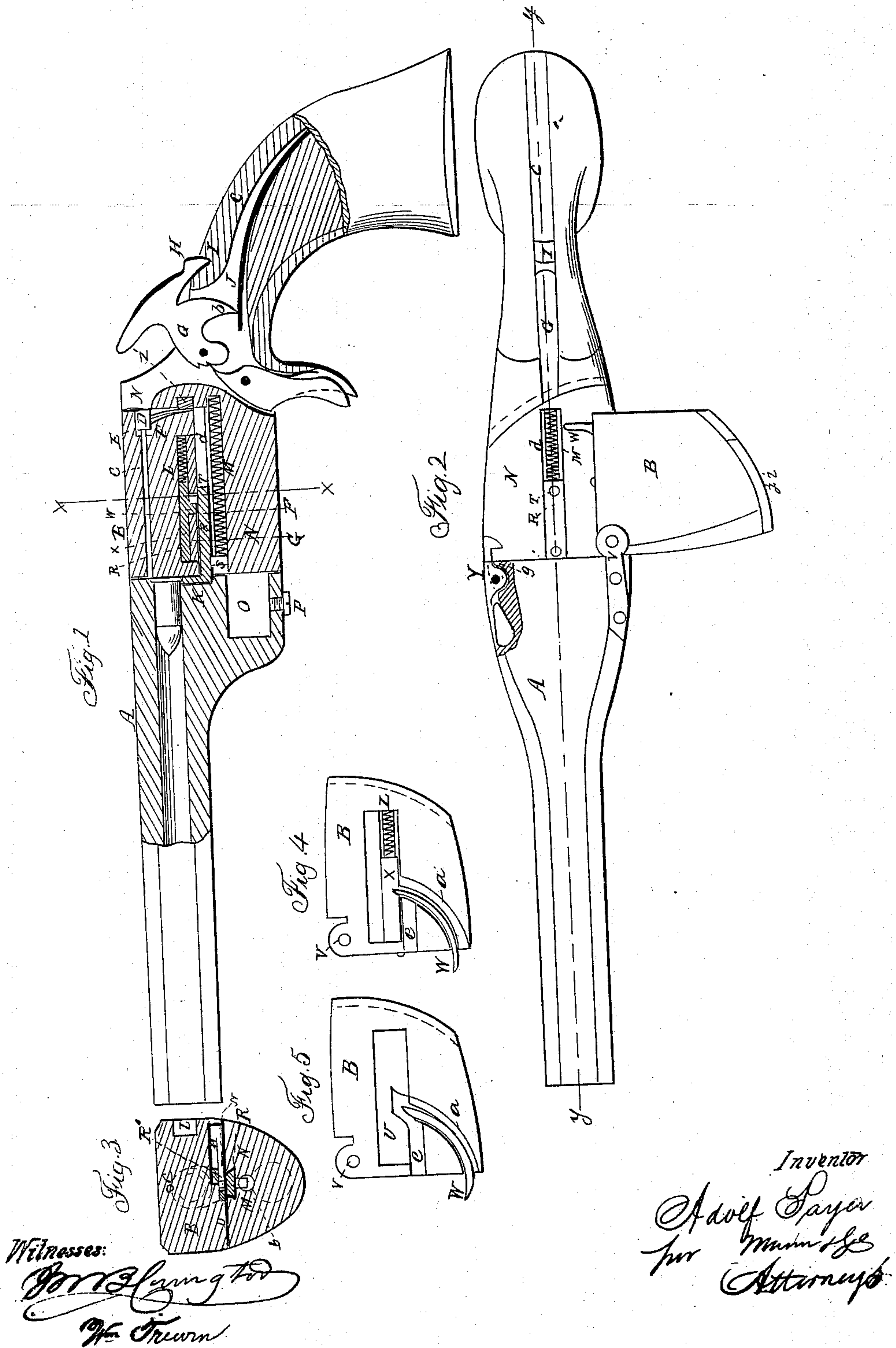


A. SAYER.

Breech-Loading Fire Arm.

Patented June 19, 1866.

No. 55,719.





# UNITED STATES PATENT OFFICE.

ADOLF SAYER, OF NAUBUC, CONNECTICUT.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 55,719, dated June 19, 1866.

*To all whom it may concern:*

Be it known that I, ADOLF SAYER, of Naubuc, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others 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 is an elevation of a fire-arm made according to my invention, drawn partly in vertical section on the line *y* of Fig. 2. Fig. 2 is a top view, the breech or recoil block being swung open. Fig. 3 is a cross-section through the breech or recoil block and the receiver on the line *x* of Fig. 1. Figs. 4 and 5 are inverted views of the breech or recoil block detached.

This invention is applicable to rifles as well as to other descriptions of fire-arms. In this example it is shown applied to a pistol. The breech or recoil block is made to swing out of the receiver in a horizontal direction, and is locked, when brought to its place in the receiver, by means of an ordinary spring-latch. The firing-pin is placed in the recoil-block and is held in place by a spring. The hammer is provided with a device for arresting its backward motion, so that the spring which drives it forward when the trigger is withdrawn cannot be injured by violent pulls on the hammer in the act of cocking it. The shell-extractor is moved backward on the upper face of the receiver by means of a spring-hook of peculiar construction connected with the under side of the breech or recoil block.

A designates the barrel of a fire-arm. The receiver N is connected to the breech of the barrel, in this example, by means of a pin, O, of considerable diameter, which extends from the receiver and enters a cavity made for it in the lower part of the breech, directly beneath the bore of the barrel. When the pin O is in place it is secured by means of a fastening-bolt, P, from the lower side of the barrel. The back end of the receiver is attached to the stock in any suitable way.

B is the breech-block, or it may be called a "recoil-block." It is so arranged and constructed as to swing away from behind the

breech of the barrel in a horizontal path, being hinged to the left-hand side of the breech by means of a hinge, V. The hinge and its joint are so made that the block can swing open until it stands about at a right angle to its position when it closes the breech of the barrel. When it closes the breech it is secured in that position by a latch, Y, on the right-hand side of the breech, and at that time the flange Z, on the back part of the block, fits in a groove in the back side of the receiver, said groove being seen in cross-section in Fig. 1 and in dotted outline in Fig. 2. The hammer and trigger are placed in the back part of the receiver, the sear forming part of the hammer and being engaged by the trigger in the usual way.

H is an arm which extends backward from the top of the hammer. The point or end of the arm, when the hammer is drawn back, is received in a cavity, I, made in the upper face of the movable piece *c*, which is set in the stock to close the cavity or slot in which the hammer-spring J is placed.

The letter *b* designates the tumbler of the hammer, whose point extends downward and backward behind the axis of the hammer, where it can be acted on by the spring J. It results, from the construction of the hammer here shown, that I am enabled to use a spring of light character, because the spring is not subject to injury in the act of cocking.

K is the shell-extractor. (Seen in dotted outline in Fig. 3 and in side view in Fig. 1.) Its upper edge is curved so as to fit the shell of the cartridge, the horns of its curve being carried up more or less, so as to embrace more or less of the shell, (less than half its circumference,) as may be desired by the maker.

R is a plate which extends backward from the lower part of the shell drawer or extractor, and moves in a slot, *d*, along the bottom of the receiver. A groove is made in the bottom of the slot *d* to receive a spiral spring, M, whose forward end acts on the plate to shove it forward by means of a pin, S, projecting downward from the forward end of the plate into the groove before the end of the spring. The hinder end of said plate has a pin, T, projecting upward above it, as seen in Figs. 1, 2, and 3. The under side of the breech or recoil block



carries a curved hook or dog, W, placed on a curved groove, *a*, which is wider than the breadth of the hook, as seen in Fig. 4, which is an upturned view of the bottom or under side of the block. The curve of the hook W is eccentric with respect to the axis of motion of the block, its radius increasing toward its outer end, where its distance from the hinge V of the block is greatest.

X is a plate to whose side the inner end of the hook or dog W is rigidly attached. Said plate is sunk a little below the level of the hook, and is confined in a slot in the block by means of a cover, U, which is cut away at one side, at *f*, opposite to the end of the groove *a*, to allow the hook W room to move back and forth, and also to allow the pin T to be changed from groove *e* to groove *a*, as hereinafter explained. The plate X is pushed forward by a spring, L, in the same groove with the plate, said spring acting against its back end, and tending to keep the hook or dog always in its most forward position, but suffering it to yield backward when any force is applied in that direction. The under face of the block has also a groove, *e*, which intersects the groove *a* near the heel of hook W. Fig. 4 shows the arrangement of the grooves *a* and *e*. In Fig. 5 the confining-plate U is shown covering the plate X. The lateral slot *f* in the plate U forms a passage from groove *e* to groove *a* around the heel of hook W.

When it is desired to withdraw the shell of an exploded cartridge the latch Y is raised and the block B is pushed toward the left out of the receiver, when the hook W, with whose convex side the pin T is in contact, draws against the pin T, and gradually pulls the extractor backward with a motion which is accelerated as the point of the hook approaches the pin. When the point of the hook has passed the line of slot *d*, along which the pin T moves, the shell will have been drawn out

of the bore of the barrel, and the pin T being at that time released by the hook, the shell drawer or extractor is sent back to its place against the breech, ready for another discharge.

The point of hook W, when the breech-block is closed, is received in a cavity, *g*, in the breech, which cavity is indicated in dotted outline in Fig. 2. When the breech-block is closed the position of the pin T is in line with the mouth of groove *e*, which receives it and allows the pin to come in contact with the hook, which it pushes back far enough to allow the pin to pass out of groove *e* into the lateral slot made in the cover U, from whence it is ready to pass again over the convex side of the hook as soon as the latter is pushed forward again by the spring L.

The firing-pin C is enlarged on its hinder end at D, such enlargement, which is cylindrical in shape, being received in a cylindrical cavity, E, in the back part of the breech-block, below which cavity is a vertical cavity in which plays a flat spring, F, whose upper free end penetrates the enlargement D and operates to push the firing-pin so that it will be in contact with the flange of any cartridge constructed in the bore of the barrel when the breech-block is closed.

In cases where the forward part of the receiver embraces the breech of the barrel the breech-block may be hinged to that part of the receiver.

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

In combination with swinging breech-block, the hook W, the groove *a*, in which it is placed, and the groove *e*, substantially as and for the purpose described.

ADOLF SAYER.

Witnesses:

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