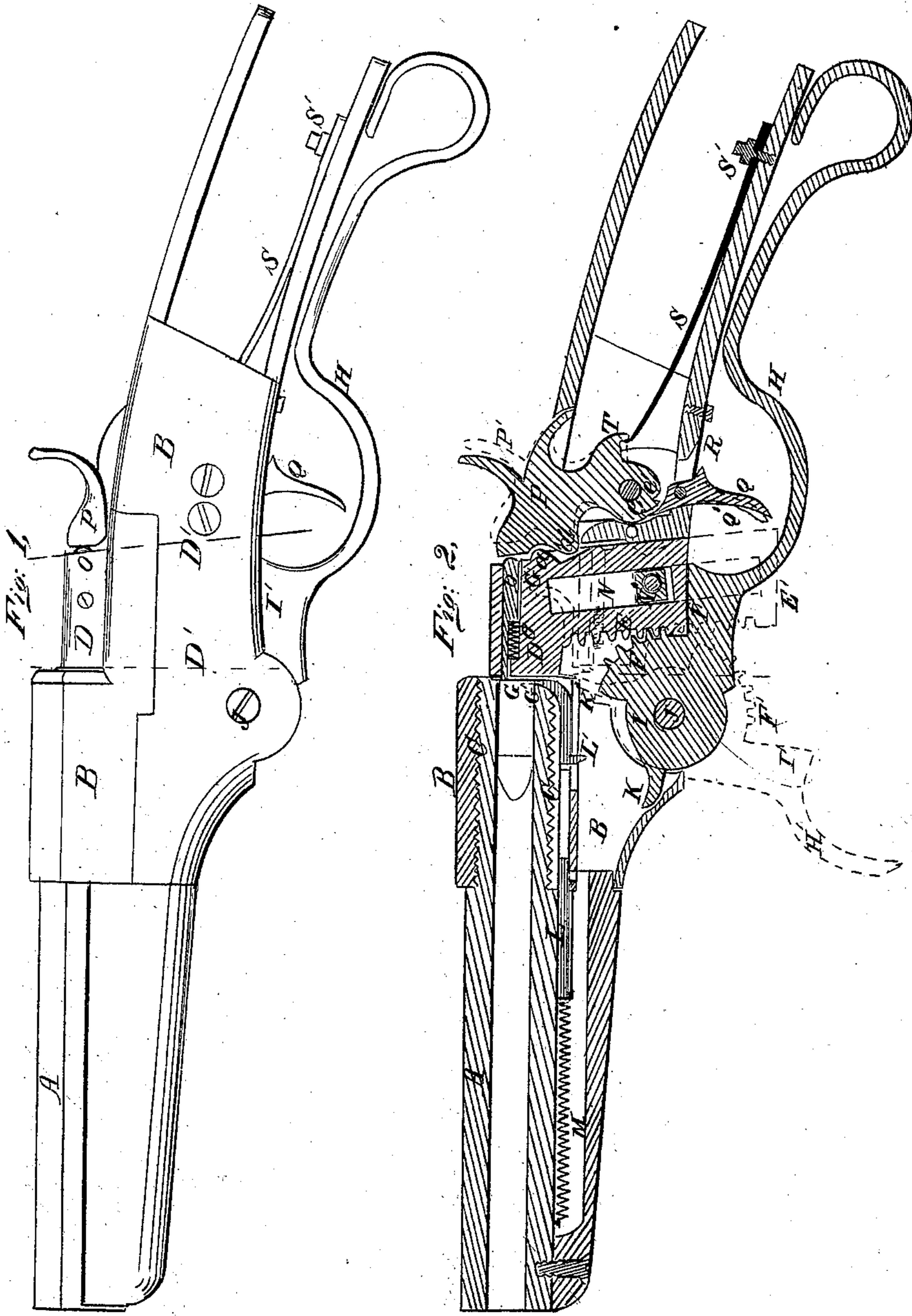


W. ALDRICH.
Breech-Loading Fire-Arm.

No. 38,455.

Patented May 12, 1863.



Witnesses
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 38,455, dated May 12, 1863.

To all whom it may concern:

Be it known that I, WALES ALDRICH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view, and Fig. 2 is a longitudinal section.

My invention relates to a combination of devices for opening and closing the breech of the gun-barrel; to the form and arrangement of such devices, whether acting in combination or singly; to the devices for removing the shell of the exploded cartridge; to the devices for bringing the piece to a half-cock by the manipulations in loading, and to the peculiar structure of the lock.

This gun is adapted to the use of the metallic cartridge having the fulminating mixture in the base, which is ignited by percussion, it being necessary to remove the exploded cartridge-case before introducing another.

In Figs. 1 and 2, A represents the barrel and B represents the breech, which consists of a strong metallic chamber, into the forward portion of which the barrel is inserted by means of a screw or otherwise, as seen at C. The middle portion of this chamber contains a wedge-shaped body, D, made of metal, and to which is connected the rack E, which forms a part of the same. The chamber formed by the breech-piece B is open both above and below, and the wedge-shaped body D slides up and down within this opening, whose front and rear boundaries are indicated by the red lines D' D' in Fig. 1. When the body D is in the position shown in Fig. 1, the bore of the gun is completely closed, as seen at G. This wedge-shaped body D is moved up and down by means of a segmental pinion, F. This pinion F is located partly within the chamber of the breech below and forward of the body D, and forms the head or point of articulation for the guard H. This head is shown at I, and the screw-pin upon which it articulates is shown at J. This pin J is supported on either side of the head I by the walls of the chamber of the breech, and forms the center or axis of motion of the segmental pinion F. The

guard H is simply an extension from the head I, the neck of which, I', fits accurately to the lower end of the body D. The dotted lines shown at H' show the position of the guard when the breech of the gun is thrown open to receive the charge, and the dotted lines at F' show the position of the segmental pinion when the guard is thus thrown forward. When the guard H is thrown back against the breech of the gun, as shown in Fig. 1, the wedge-shaped body D completely closes the bore of the gun, as shown in Figs. 1 and 2, and the pinion F is then in gear with the ratchet E. Consequently, the body D cannot move downward as long as the guard H remains in the position seen in Fig. 1.

As before stated, the red lines D' D' in Fig. 1 show the general shape of the cavity, in which the body D slides up and down to close and open the bore of the gun. Consequently, by means of this wedge-shaped cavity, the body D works quite freely the moment it begins to descend, but presses firmly against the breech of the barrel the instant the guard is brought to the position seen at H.

The dotted lines E' show the position of the rack when the pinion F is out of gear.

K represents a spur projecting from the head I of the guard H, which moves through the space K K' and operates the slider L, that removes the exploded cartridge-shell from the chamber of the bore of the barrel. This slider L moves in a recess along the under side of the barrel, and is drawn forward by the spring M. The spur K, in the movement of the guard H, is brought into contact with the lip L' on the under side of the slider L; but the spur K must pass from its position at K to L' before this contact is made, and during this movement the pinion F is in gear with the ratchet E and carries down the body D below the bore of the gun, leaving a clear space for the removal of the shell of the exploded cartridge; but the moment the last tooth of the pinion F leaves the teeth of the ratchet E, the spur K comes in contact with the lip L', and the slider L is moved backward for the purpose of drawing the exploded shell of the cartridge from the chamber of the barrel. The heel of this slider is made to fit the body of the cartridge just forward of the rim at its base, as shown at G', and thus effect its removal. The body D is mortised, as shown at N, and moves upon

a square stud, N', which keeps it in proper place when the guard H is thrown forward.

O represents a bolt or needle, made of tempered steel, which is placed in a recess drilled through the head of the body D, the forward end being much the smallest. This bolt is pushed backward by a spiral spring, O'. The point of the bolt comes nearly into contact with the heel of the cartridge, and consequently a blow upon the back end of the bolt by the hammer gives a sudden percussion upon the rim of the cartridge, which is provided with a detonating mixture, and thus explodes it. This blow is given by the hammer P in the usual manner.

Upon the back side of the body D is a projection, a, which is brought into contact with a like projection, a', on the forward side of the hammer P as the body D descends, and by means of this contact the hammer is shoved back to the point indicated by the dotted lines P', thus bringing the piece to a half-cock by allowing the point of the trigger Q to fall into the notch e, as indicated by the dotted lines Q'. The lower end of the trigger is pressed forward by the spring R, which causes the upper end to fall into the notch e the moment the hammer is brought back a sufficient distance by the projection a, acting against the projection a' upon the hammer.

The mainspring S consists of a slightly-

curved bar of steel, secured by a screw, S', to the breech-piece B. The free end of the spring S presses against the nib T on the back part of the hammer, as shown in Fig. 2.

In loading this piece the guard is thrown forward to H', the body D is thereby drawn down to E', the exploded cartridge being by this movement removed, as before stated, a new cartridge is introduced into the breech of the barrel, and the guard is then brought to its original position, (shown in Fig. 1,) when, upon cocking, the piece is ready to be discharged. This half-cocking by the movement of the guard in either direction is an important feature in this invention, for it not only saves time in loading, but effectually secures against the accidental discharge of the piece.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The wedge-shaped body D, rack E, and pinion F, in combination with the rigid spur K and slider L, when these parts are constructed, arranged, and operated substantially as and for the purpose specified.

2. The herein-described devices for bringing the piece to a half-cock by the movement of the body D, as set forth.

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Witnesses:

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