2 Sheets—Sheet 1.

H. UPDEGRAFF.

Breech-Loading Fire-Arm.

No. 205,447. Patented June 25, 1878.

FIG. 1.

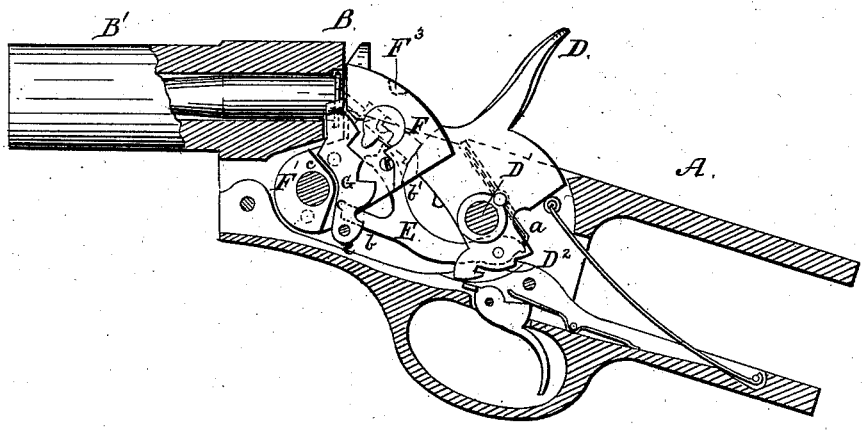


FIG. 2.

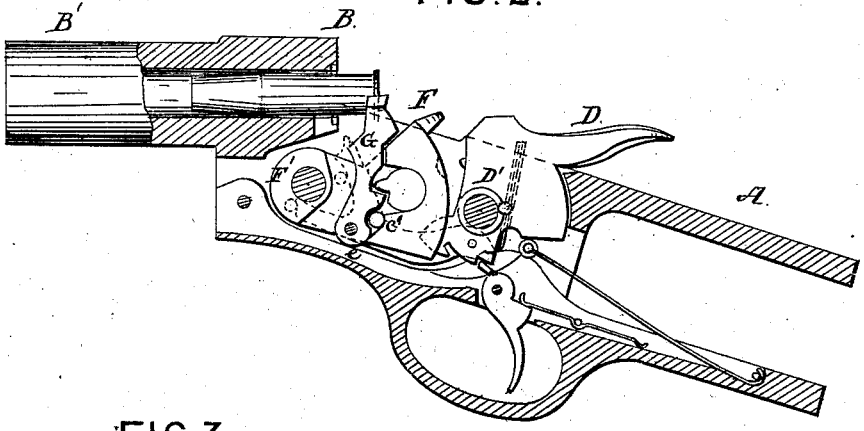


FIG. 3.

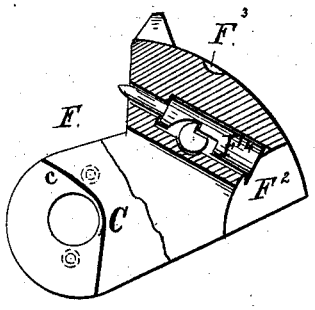
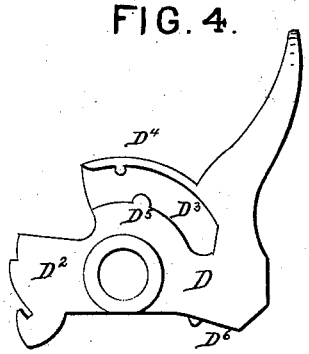


FIG. 4.



WITNESSES

Saml R Turner

C. M. Sites

INVENTOR

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2 Sheets—Sheet 2.

H. UPDEGRAFF.

Breech-Loading Fire-Arm.

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FIG. 5.

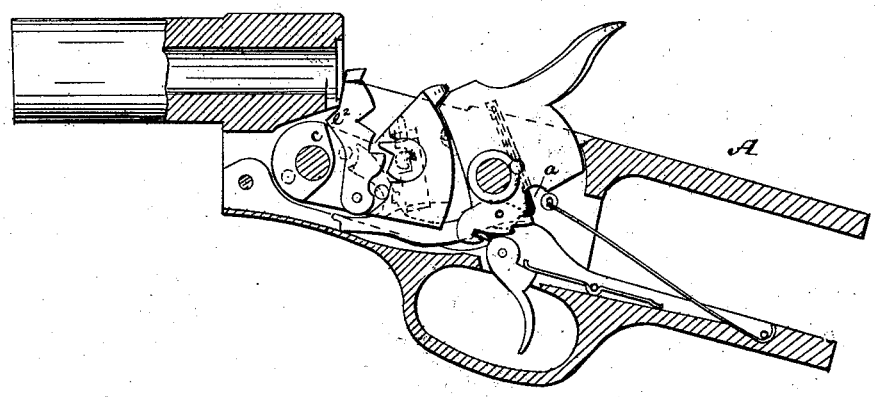


FIG. 6.

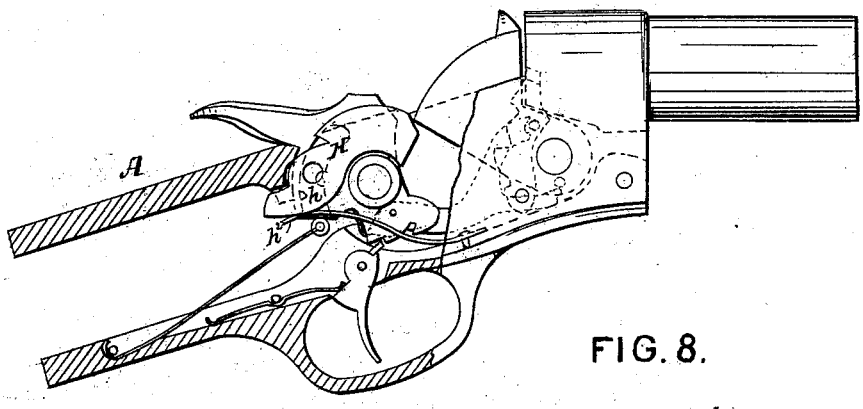


FIG. 8.

FIG. 7.

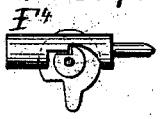
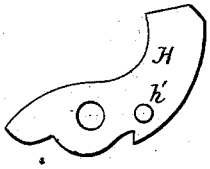
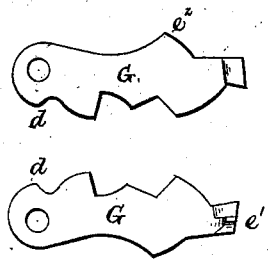


FIG. 9.





WITNESSES

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UNITED STATES PATENT OFFICE.

HORACE UPDEGRAFF, OF SMITHFIELD, OHIO.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **205,447**, dated June 25, 1878; application filed March 19, 1878.

To all whom it may concern:

Be it known that I, HORACE UPDEGRAFF, of Smithfield, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in that class of breech-loading fire-arms described and patented by me in Letters Patent No. 189,973, dated April 24, 1877, and has for its object to furnish a breech mechanism wherein the breech-block is locked by the nose of the hammer, the extractor operated more effectually, and whereby other improved results are obtained.

It consists in the construction of the breech-block with a side recess and cam-shoulder, in an extractor pivoted to a pin fixed to the frame and operated by the breech-block, and in other improvements, all of which will be hereinafter fully explained.

In the drawings, Figures 1, 2, 5, and 6 are sectional views of the frame, showing the breech mechanism in different relative positions. Fig. 3 is a view of the breech-block, partly in section. Fig. 4 is a side view of the hammer. Fig. 7 is the firing-pin. Fig. 8 is the extractor, and Fig. 9 is the safety-arm.

A is the frame, in which are secured the several parts of the breech mechanism, and to which is attached the breech B of the barrel B′.

D is the hammer, turning on the pin D^1, having its lower end D^2 extended below the axis or pin D^1, and provided with notches for catching the trigger, as shown. On the side of the hammer above the axis there is formed a groove, D^3, in which are formed shoulders or cams D^4 D^5, for operating the safety-arm, hereinafter described. The lower end D^2 is slotted, and provided with a spring, *a*, for receiving and holding the end of the sear E. Just below the nose of the hammer is formed a projection, D^6, adapted to enter a recess in the breech-block, hereinafter described.

The sear E has its front end forked, as shown. The under point *b* is adapted to engage and open the breech-block, while the upper point *b′* closes the said block.

F is the breech-block, pivoted to the frame A by the pin F^1, arranged under and slightly forward of the breech B. The objects in pivoting the block in the manner described are to secure for it more perfect action, with less circular sweep or movement, to gain for it the fullest benefit from its own gravity, and so that the extractor may be pivoted in the rear of its pivotal point F^1, and so that the angle of recoil between the breech-block and barrel is made accurate, thereby giving greater power and safety in the operation of the device.

The breech-block has formed on its side, in rear of its axial pin, a recess, C, for the reception of a cam-shoulder, *c*, which engages the front side of the extractor G, and causes the latter to move slowly backward as the breech-block is opened. When the breech-block is nearly open, a shoulder or pin, *c′*, engages a projection, *d*, on the rear side of the extractor, which gives to the latter a quick jerking movement, which throws the shell entirely out of the barrel.

The breech-block has formed in its rear edge a curved recess, F^2, which receives the nose of the hammer, the latter entering said recess with a wedge or cam action, forcing and locking the block firmly against the breech. On the upper edge of the block is a small recess, F^3, adapted to receive the projection D^6 on the hammer D. The breech-block, when it is open, as shown in Fig. 5, is forced and held firmly down by the action of the projection D^6 in the recess F^3.

The extractor G is pivoted at *e* to and near the lower side of the frame A. It is arranged in rear of the pin F^1. Its upper end is constructed with a small projection, e^1, which catches the rim of the shell.

When the breech-block is closed its upper end rests in a small recess in the breech B, as shown. It is operated by the cam *c* and shoulder *c′*, as hereinbefore explained.

When the breech-block is open, as shown in Fig. 5, its upper end stands out slightly from the breech B, with the breast or projection e^2 resting firmly against the cam c, which prevents any springing or recoiling movement when the cartridge is hurriedly inserted.

H is the safety-arm, which holds the breech-block to guard against a premature discharge. It moves on a pivot, h, on the frame A, and is provided with a pin, h', on its inner side, which projects into the groove D^3, and is actuated by the cams D^4 D^5.

When the hammer is at full-cock the end of the arm H is behind the block, as shown in Fig. 6.

When the hammer is down or is at a half-cock, the arm is raised clear of the breech-block, its end resting in such a position as to prevent the introduction of dirt or other obstructions to the breech mechanism.

The operation of the device may be clearly understood by reference to the drawings.

After the gun has been fired the parts will occupy the position shown in Fig. 1. If the hammer be drawn back to the position (which is slightly beyond a full-cock) shown in Fig. 2, the shell will be thrown out of the breech. In the first part of this movement the cam c on the breech-block acts with great power on the extractor, which is moved very slowly, thus relieving the shell from any tightness which may have been caused by the slightly-tapering shape of the shell, or by expansion caused by the explosion.

When the hammer is let down from the position shown in Fig. 2 to that shown in Fig. 5, the breech-block will be slightly elevated, so as to cause the extractor to turn forward, with the breast e^2 resting firmly against the cam-surface c, from which position there will be no recoiling or backward movement of said extractor when the rim of the cartridge is placed quickly against the projection e^1 in the act of loading the gun.

The cartridge is not placed entirely in the breech B by the hand, but is inserted till its rim is caught by the projection e^1 on the extractor, after which, by drawing the hammer to a full-cock, as shown in Fig. 6, the breech-block, in closing, forces it into the barrel, with the extractor in the position shown in Fig. 1.

When the hammer is let down into the position shown in Fig. 5, the projection D^6 enters the recess F^3 and locks the breech-block. The action of the projection is such as always to bring the breech-block into place, thus securing perfect position for the other parts of the breech mechanism.

When the safety-arm is raised clear of the breech-block in bringing the hammer to a half-cock, its rear end bears on the end of a spring, h^2, which is so constructed as to hold said block in its elevated position until the hammer is drawn to a full-cock, and the sides (which are suitably inclined for the purpose) of the forward end of the groove D^3 come in contact with the pin h, and release the bar from said spring.

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

1. The breech-block F, having the recess C, cam-shoulder c, and stop c', in combination with the extractor G, pivoted to the frame A, and having the shoulder e^2 and shoulder d, substantially as and for the purposes set forth.

2. The combination, with the safety-arm H, pivoted to the frame A, and provided with a pin, h, of the hammer D, having the groove D^3 and cams D^4 D^5, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HORACE UPDEGRAFF.

Witnesses:
P. B. TURPIN,
J. MASON GOSZLER.