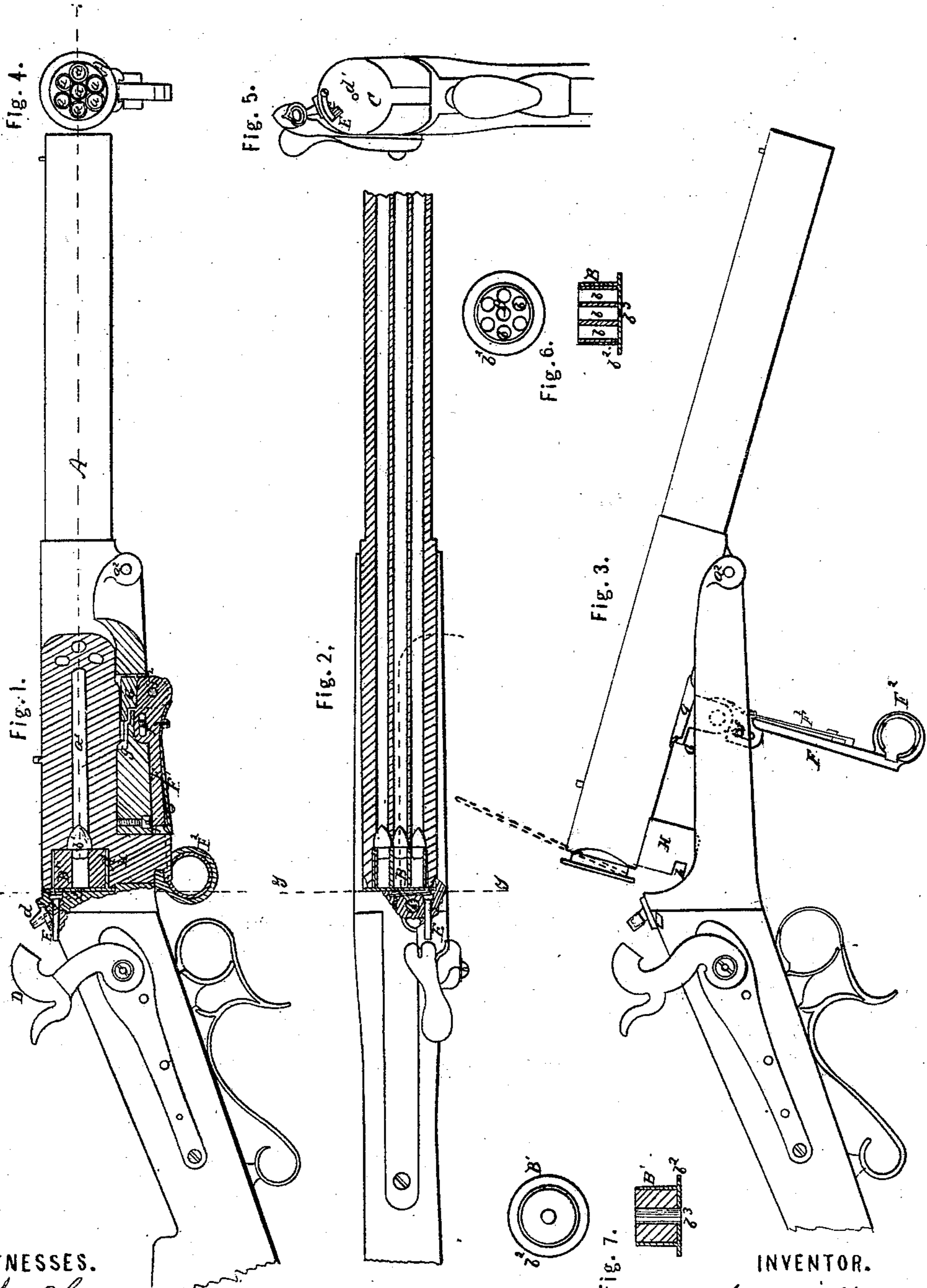


W. D. HILLIS.  
Breech-Loading Fire-Arm.

No. 44,312.

Patented Sept. 20, 1864.



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

W. D. HILLIS, OF JOLIET, ILLINOIS.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 44,212, dated September 20, 1864; antedated September 16, 1864.

*To all whom it may concern:*

Be it known that I, WILLIAM D. HILLIS, of Joliet, in the county of Will and State of Illinois, have invented a new and Improved Breech-Loading Fire-Arm; 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 side view of a gun embodying my invention, a portion of the barrel and supporting-frame being broken away to expose the interior of the barrel, and also to illustrate more clearly the locking device to be hereinafter described. Fig. 2 represents a horizontal section of the barrel in the line  $xx$ , Fig. 1. Fig. 3 is a side view of the gun with the barrel tilted into position to receive the cartridge. Fig. 4 is a rear end view of the barrel. Fig. 5 is a transverse section through the frame of the stock, taken in the line  $yy$  of Fig. 2. Fig. 6 represents a horizontal section and front end view of a seven-ball cartridge-case to be used in connection with my improved carbine. Fig. 7 represents similar views of a single-ball cartridge-case.

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

The object of this invention is to produce an arm from which a number of balls may be simultaneously discharged and the act successively repeated with great rapidity and ease and with telling effect upon the ranks of an enemy, and which may be adapted to carry a larger ball that can be accurately fired alone or in conjunction with a number of smaller ones.

This invention relates to a peculiar arrangement of devices for locking the barrel in position for being fired and adapting the same to be readily tilted for loading, as will be explained.

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.

In the accompanying drawings, A may represent the barrel of my improved gun, which in the present instance is provided with seven rifled chambers,  $a a'$ , as illustrated in Fig. 4.

In forming the barrel the chambers  $a$  may be made to slightly diverge from the butt to the muzzle, in order to scatter or spread the balls which may be projected therefrom, and thus prove much more destructive in use where masses or large bodies of the enemy are engaged. If preferred, the central chamber,  $a'$ , may be made somewhat larger than the others, in order to obtain greater range, and as this chamber must invariably be undeviating or straight it may be relied upon when used in conjunction with the surrounding divergent chambers in cases where accuracy is required.

$A'$  represents a chamber or receptacle in the rear of the barrel, which communicates with the chambers  $a a'$ , and into which either of the cartridge-cases B or B' may be inserted, as shown in Figs. 1 and 2. The cartridge-case B is formed with seven chambers,  $b$ , corresponding in size with those of the barrel A, each chamber of the cartridge-case being designed to contain a charge of powder and a ball for the respective chambers of the barrel. The compartments of the cylinder B are designed to communicate at the rear end, so that when the explosive material within one of the compartments is ignited combustion will be communicated to the entire number contained within said cylinder, and thus all the charges will be simultaneously exploded. The cylinder or shell B, Fig. 1, is formed entirely of metal, and is of the same dimensions and shape externally as the cylinder B, but is adapted to contain one charge only, as shown at  $b'$ , Fig. 1, and this is to be fired from the central chamber,  $a'$ , the object of this modification being to prevent waste of ammunition in cases where single objects are to be fired at. The cartridge-cases B B' are each formed with a circular flange,  $b^2$ , which, when the charge is fired or exploded, forms a tight joint between the butt of the barrel and breech-piece  $c$ . The cartridge B, being inserted in the chamber  $A'$ , may have its entire contents exploded by means of a common percussion-cap fitting over the nipple  $d$  and exploded by the head of the hammer D, an aperture,  $d'$ , affording communication between said nipple and a central aperture,  $b^3$ , which may be made in the disk  $b^2$ ; or the explosive material within said

cylinder may be ignited by the percussion of a sliding pin, E, impelled or driven forward by the shank of the hammer D striking it when the trigger is pulled. A spring, *e*, serves to retract the pin E when the hammer is raised to a half-cock. If the sliding pin E be employed, it will of course be needful to provide the cartridge-case behind the charge with a fulminate, which will ignite and cause the charge to explode immediately upon the pin being driven forcibly forward against the case. A charge contained within the cylinder B' may be most readily ignited by the percussion-cap, as the aperture *d* communicates with the central aperture of the disk *b*<sup>2</sup>.

F represents a lever by which the barrel A may be elevated to permit the insertion of the cylinder B or B', and locked in position for firing. The lever F has its fulcrum at *f*, and is attached by a pin, *f*<sup>2</sup>, to a sliding lug, G, in such manner that the elevation and depression of the lever F will cause the lug G to move forward and backward in ways *g*, formed on the under side of the barrel, each movement being attended with the elevation or depression of the rear end of the barrel A.

In the end of the lever F opposite that at which it is pivoted to the barrel is formed a slot, *f*' , for the reception of a projection, H, formed on the rear under side of the barrel A. When the barrel is to be locked, the lever F is pressed into contact with the barrel, when a spring, F', secured to the lever F, causes the

said lever F to be slightly advanced, whereupon the rear edge of the slot *f*' enters a niche, *h*, in the projection H. Thus the barrel is securely locked in position for firing. By retracting the lever, so as to withdraw the edge of the slot *f*' from the niche *h*, the lever may be readily depressed, and consequently the rear end of the barrel elevated for the insertion of a cartridge.

The lever F has an eye, F<sup>2</sup>, formed in its movable end, to facilitate the manipulation thereof.

I do not limit myself to the number of chambers herein specified, but propose to increase or diminish the same, and also to have them either parallel or divergent, as may be desired.

The red lines in Fig. 2 illustrate a simple mode of removing the cartridge-cases.

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

In combination with the lever F F<sup>2</sup> *f*' , sliding lug G, ways *g*, and spring F', the projection H, provided with the niche *h*, when arranged in the manner and for the purpose described.

The above specification of my improved breech-loading fire-arm signed this 21st day of November, 1863.

W. D. HILLIS.

Witnesses:

G. W. BOWEN,  
JOHN McCARTHY.