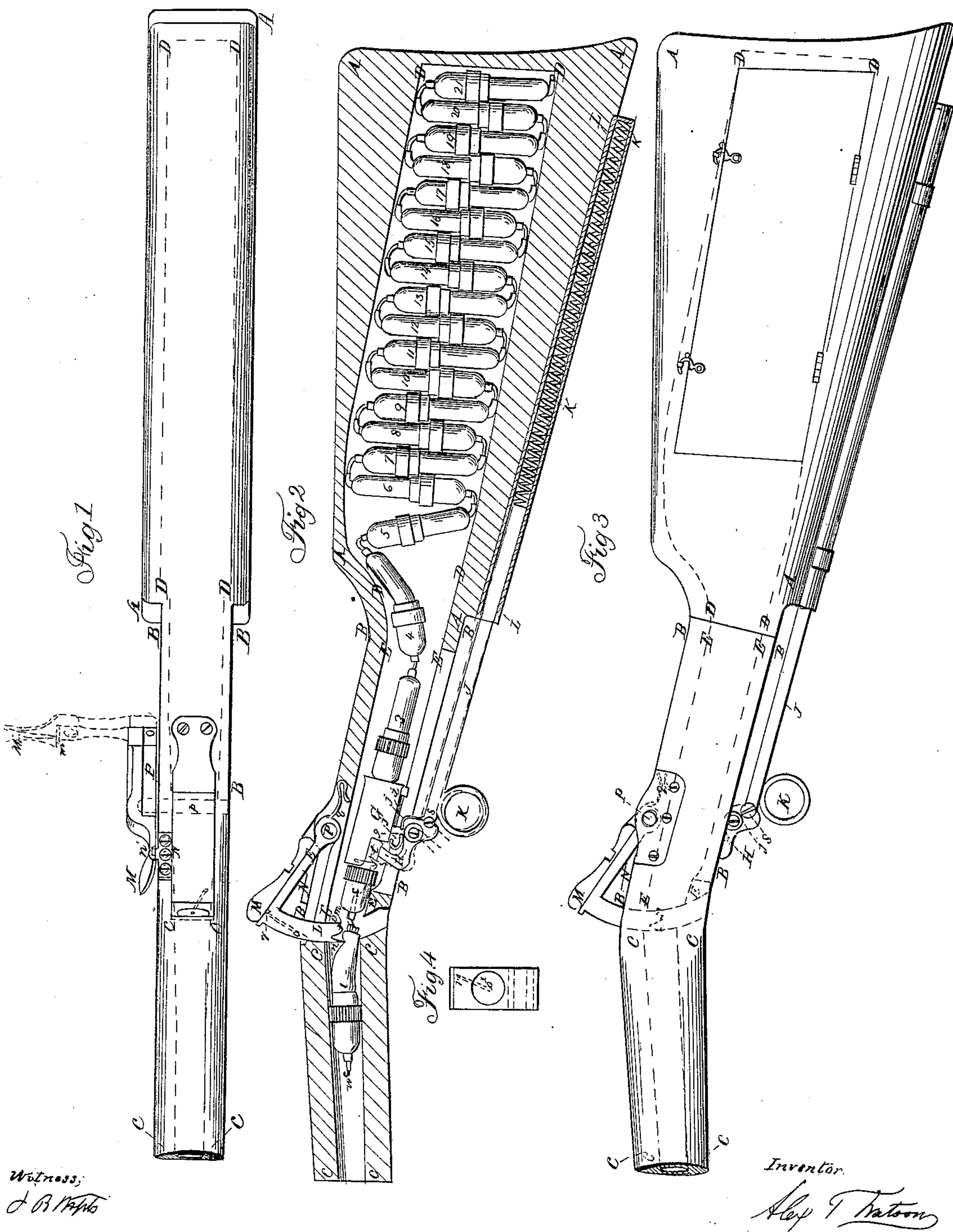


A. T. WATSON.  
Magazine Fire-Arm.

No. 12,567.

Patented Mar. 20, 1855.





# UNITED STATES PATENT OFFICE.

ALEXANDER T. WATSON, OF CASTLETON, NEW YORK.

## IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **12,567**, dated March 20, 1855.

*To all whom it may concern:*

Be it known that I, ALEXANDER T. WATSON, of Castleton, Richmond county, State of New York, have invented certain new and useful Improvements in Breech-Loading Fire-Arms, and in the mechanism of charging and discharging the same; and I do hereby declare that the following is a full and exact description of my said invention, reference being had to the drawings accompanying the specification and making part thereof.

Figure I represents a top view of the exterior of the stock, the handle, and part of the barrel and top of breech-piece and cut-off. Fig. II represents a vertical longitudinal section through the stock, handle, and part of the barrel, and showing the magazine and cartridges packed therein; also the interior mechanism for regulating and transferring the cartridge from the magazine to the chamber, and also the cut-off and movable breech; also the chamber of the bore and cartridge deposited therein. Fig. III represents an exterior side of the gun and mechanism viewed from the left side, also the door for discharging the magazine. Fig. IV represents front face of the breech-piece and that part of the breech which faces the chamber.

Similar letters represent similar parts in all the different figures.

A A A A represent the stock or breech of the gun. B B B B represent the part between the breech and stock, constituting the handle of the stock. C C C C represent the barrel of the gun, in which is the chamber. D D D D represent a hollow space inside of the stock for the magazine or cartridge deposition. E E E E represent a tube, being a continuation of D D D D, and through which the cartridge is conducted to the chamber of the barrel by means of the mechanism hereinafter more particularly described.

In the construction of the gun or arm to be made according to my improvement, the ordinary form and outline of the gun are preserved. The stock is made hollow the whole length of the body of the stock, except a portion forming the butt of the stock, and also by a continuation carried through the handle in the form of a tube to the point where it meets the breech or barrel of the gun. This magazine is constructed of such a shape as to receive a

certain number of cartridges placed side by side, so as to fill the whole space of the magazine. By the increasing the width of the magazine a greater number of cartridges may be placed in it by arranging them in tiers of two or more deep. These cartridges are made of india-rubber, paper, or any other suitable material, having the ball in front and powder at the other end, and are connected together by an elastic string of india-rubber or other material passing through the center of the bullet and the body of the cartridge, and connecting the head of each cartridge to the opposite end of the preceding, so that they form together a series of links, a small portion of this connecting-string being left outside, so as to allow each cartridge to be slightly separated from the succeeding one, as shown in Fig. II, Nos. 1, 2, 3, &c.

The regulating and conducting of the cartridge to the chamber of explosion are effected by the following described means: The hollow space or tube E E E E, and forming a continuation of the space of the magazine as far as the chamber of the bore, is made a little larger than the diameter of the cartridge, so as to permit the notched cylinder G to slide freely along its length, the cartridge being within the cylinder. This cylinder is seen at G, and is notched out on the under side of the forward part. The interior diameter of this cylinder should be just sufficient to allow the cartridge to pass freely through it.

Corresponding with the part of the cylinder notched out, as above described, but smaller in dimensions, is a movable plate, *l*, which is secured to the bent lever H, which has its fulcrum or bearing at *h*, which fulcrum or pivot is sustained by the forked standard *j' j'*, firmly secured to the cylinder G. Underneath the cylinder G is the bent and curved spring *i i i*, which is fastened at the after part of the cylinder, passes forward through the forked standard *j' j'*, and, curving backward, presses the upper part of the short arm of lever H. On the under side of the stock of the gun, contained in a tube or sheath, L L, is placed a spiral spring, K K. This barrel containing the spring is represented on the outside of the stock; but perhaps it would be more convenient and make a neater finish to have it within the stock itself, so as to be flush with the un-



der surface of the stock. Into the fore part of this tube, and pressing upon the spiral spring, is introduced a rod or solid piston, J, of the diameter of the inside of the tube, the opposite end of which is secured, by a pin, s, to the after part of the short arm of lever H, but allowing the lever to play or turn slightly upon it. Upon the under side of this rod or piston J is secured the ring k. This ring is for inserting the finger to draw back the mechanism, as hereinafter described.

It should be observed that through the under side of the handle of the gun is a slot or open channel wide enough to allow the standard  $j' j'$  to slide backward and forward with the lever attached, and of a length about sufficient to enable the standard and cylinder G connected to it to be drawn backward from one cartridge, so as to cover the next succeeding cartridge. In order to facilitate the motion of the cylinder and parts connected back and forth, two friction-rollers, one of which is seen at  $j$ , are placed upon the pivot  $h$ , and they run upon either edge of the slot or channel just described.

The tube or hollow space in which G is placed, and through which the cartridges are conducted from the magazine to the chamber of the gun, should be at their point of junction on the same line, or nearly so.

Behind the chamber of the gun is placed a movable breech-piece, L, which is in one piece with the arm L', nearly at a right angle to it, having its pivot or fulcrum at  $p$ . The rise and fall of the breech-piece describes a segment of a circle, and for the purpose of receiving this breech-piece a slot corresponding with the breech-piece is cut through the junction of the barrel with the handle of the gun, leaving a sufficient thickness of metal on either side to hold the barrel and stock securely together. The slot and breech-piece are of sufficient width to completely cover the bottom of the chamber of the gun, and also a sufficient space on either side to make a tight and safe joint. This slot is continued through to the under side.

The movable breech-piece should be of sufficient thickness and quality of metal to resist the strain and explosion of the cartridge. This breech-piece and slot should be made to fit with the greatest accuracy, so that when the breech-piece is down in its place it will make a close and perfect joint with the chamber of the barrel, so as to prevent the escape of any portion of flame.

The lower end of the breech-piece L is constructed so as to have a sharp-cutting knife-edge running across its lower surface, as seen at  $n$ . The middle of its under surface is rounded, as seen at  $m$ , the object of which is to keep the two contiguous cartridges from crowding or overlapping each other, and the after part of its under surface is another knife-edge, as seen at O, and these are so arranged that the anterior knife-edge first acts upon the cartridge deposited in the chamber, and then

the other parts of the under surface just described act upon the part of the cartridge about being cut off and the string of the next cartridge in succession, in the manner hereinafter described.

When the cartridges are in place, as shown in Fig. II, the front cutter of the breech-piece is made to press upon the after part of the cartridge that is within the chamber, and hold it firmly in its place by means of the spring  $q$  acting on a projection on the shoulder of the arm L'.

The front face of the breech-piece, where it meets the chamber of the gun, is made slightly concave to about the depth of one-eighth of an inch in the center, and of the exact diameter of the chamber where it comes in contact with it, as seen at Fig. IV,  $o'$ .

The vent or touch-hole of the gun passes through the breech-piece, as shown by the dotted lines  $r$ , ending in the center of the depression  $o$ , directly at the bottom of the chamber.

To the projecting end of the pin or fulcrum  $p$  is attached an arm, P, lying flat to the right side of the handle of the gun, Fig. I. On the opposite end of this arm is an elbow-joint connected with the movable arm or handle M. This arm or handle opens to a right angle with the arm to which it is connected, and no farther, as seen in the red lines of Fig. I. When closed, it folds one part down closely on the side of the arm P, and the other part, by means of a shoulder, (seen at  $m'$ , Fig. I,) close upon the side of the handle of the stock, and is there locked firmly in its place by the plate N and lip or projection  $n'$ , or any other suitable contrivance, the effect of which is to hold firmly the breech-piece in its place when down at the time of discharge or otherwise.

It will be seen by the circular shape given to the slot and breech-piece just described that it can be made so as always to press forward against the base of the barrel of the gun, thereby constituting a firm and tight breech-piece, and the form and position of the curve, combined with the cavity on the front surface of the breech-piece, contribute to hold the breech-piece steady in its place. The breech-piece has also bearings on its rear surface above and below the tube in which the cartridge is placed.

The whole of the magazine in the stock of the gun and of the tube from its connection with the magazine forward to the breech-piece may be an independent separate chamber or case, distinct from the body of the stock and handle of the gun, which chamber or case should be of metal.

The stock and handle of the gun may be advantageously constructed of sheet-copper or other metal, or of wood. The chamber of the barrel where the cartridge is deposited should slightly diminish in diameter from its base forward to the extent of about the length of the cartridge proper to be used, so that the cartridge cannot slip forward out of its place from beneath the proper action of the cutters.



The manner of operating the gun and the mechanism above described is as follows: The magazine being filled with the cartridges, placed head and end together, as seen in Fig. II, and the breech-piece L being raised by means of the arm P and handle M, and held in this position, the first cartridge is drawn forward through the cylinder G into its place in the chamber of the barrel by means of a string or wire. The string or wire, however, is only necessary on the first charging of the gun, as the last cartridge in the series is provided with a loop, *y*, by which the next or any number of series of cartridges may be attached by the hook *w*. The first cartridge (No. 1, Fig. III) thus drawn into its place, the breech-piece L, the hand being removed from it, is pressed upon the end of the cartridge by means of the spring *q*. The cylinder G, with its attachments below, is then drawn backward by the finger in the ring *k*. The same operation of drawing back the cylinder and its attachments forces down the long end of the lever H, taking off the pressure of the plate *l*, and leaving the cylinder G to pass freely backward over and onto the next succeeding cartridge, No. 3. The after part of cylinder G is slightly bell-mouthed, so as not to catch against the cartridge in its backward motion. The ring *k* is then released and the plate *l* is pressed by the operation of the spring on the cartridge, and is thus held firmly upon the cartridge, while at the same time the cylinder and cartridge within it receive a pressure forward from the spiral spring K. The breech-piece is then shut forcibly down, when the cutters cut off the end of the cartridge in the chamber and also the connecting-string of the succeeding cartridge. The pieces thus cut off fall or are driven through the opening below by the operation of the chamber *m*. The chamber of the gun is thus closed and the next succeeding cartridge completely separated from the preceding, and ready also to be brought forward into the chamber upon the raising of the breech-piece after the discharging of the first cartridge. After this discharge the breech-piece is raised, and the next succeeding cartridge is pushed forward by the head of the following cartridge held by G and its attachments. The lock is placed on the left side of the handle of the gun in the usual manner,

so that the hammer will strike upon a nipple on the movable breech sufficiently to the side, so as not to interfere with the line of sight.

The cutting the end of the cartridge is performed by the action of the lever and arm attached to the breech-piece.

The fluted raised band or ring about the bullet is for the purpose of "slugging," as it is termed. The base of the bullet is a hollow cone in shape, to aid in the slugging of the ball in its discharge. These flutings are filled with lubricating matter to prevent the leading of the barrel.

Having thus described my aforesaid improvement and the manner of constructing the same, what I claim in the foregoing is—

1. The mechanical combination and arrangement of the cylinder G, the bent lever H, and the forked standard *j' j'*, acted upon by the rod J and spiral spring K, also the spring *i i*, by which, J being drawn back, the cartridge, constructed and arranged as above described, is released from the pressure of *l* and the cylinder is made to pass over the next succeeding cartridge, and, the pressure of the finger being removed from J, the cartridge is firmly gripped by *l* and carried forward toward the chamber by the action of K and J, pushing before it also the next preceding cartridge, ready to be deposited in the chamber upon the raising of the breech-piece, which operation being repeated after each discharge, in connection with raising the breech-piece, secures a measured supply of charges from the magazine in the stock to the chamber to an extent and with a facility not heretofore attained in breech-loading fire-arms.

2. I claim, also, the forming of the breech-piece of a segment of a circle, having the concave space *o* for the bottom of the chamber, with its central point of depression in the line of the axis of the barrel.

3. I claim, also, the forming the lower end of the breech-piece into two cutters, one front, the other back, with the rounded swell between, operating as well to hold the cartridge in its place as to cut off the end and remove the parts thus cut off, as above described.

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Witnesses:

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E. STAPLES.