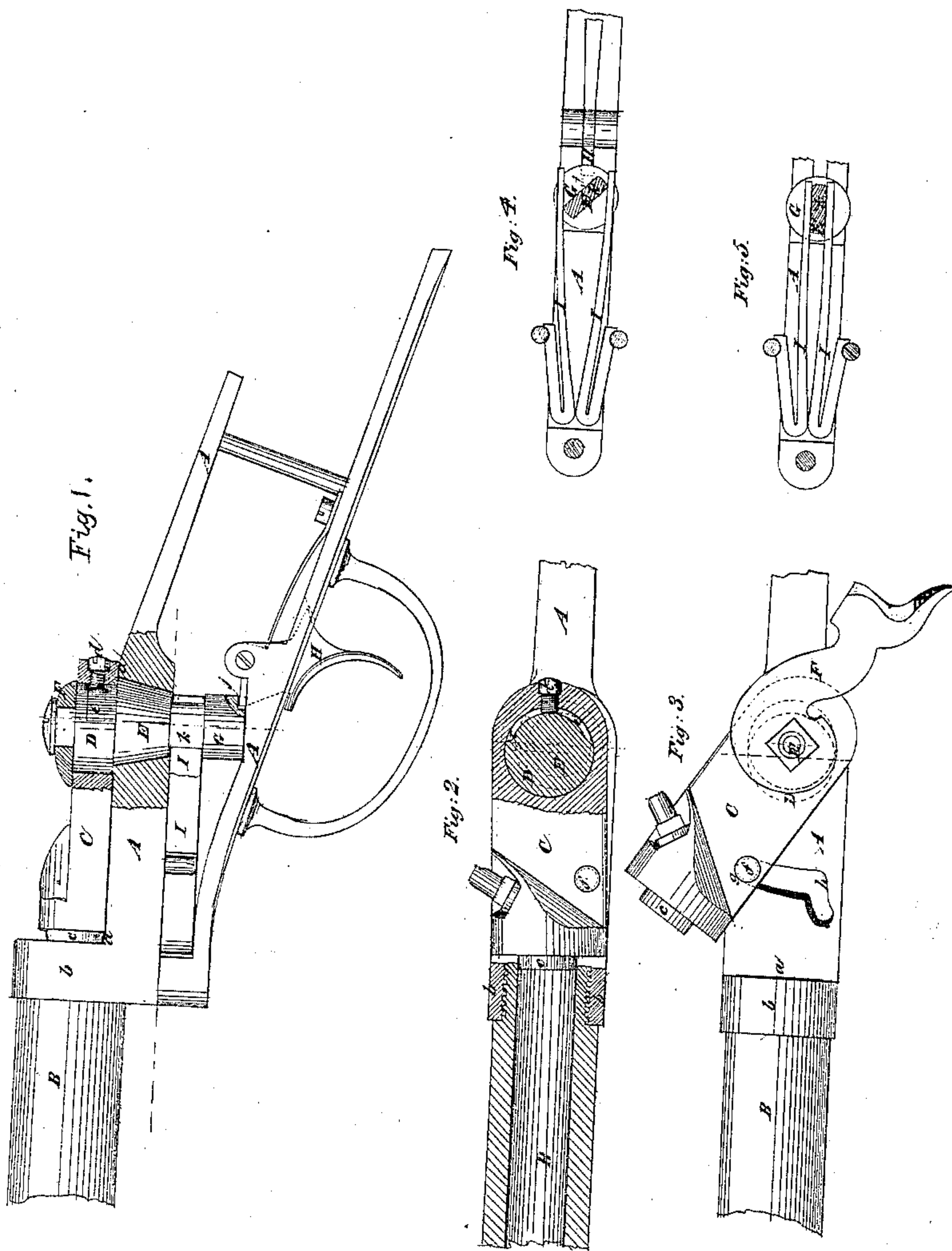


C. M. SPENCER.  
BREECH LOADING FIREARM.

No. 34,319

Patented Feb. 4, 1862.



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. 34,319, dated February 4, 1862.

*To all whom it may concern:*

Be it known that I, CHRISTOPHER M. SPENCER, of South Manchester, in the county of Hartford and State of Connecticut, 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 same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view, partly in section, of the breech, part of the barrel, the lock, the stock-frame, and the breech-operating mechanism of a rifle with my improvements. Fig. 2 is a top view of the same, partly in section, showing the breech in the position which it occupies when the hammer is cocked. Fig. 3 is a top view, showing the breech in condition for loading. Figs. 4 and 5 are horizontal sections of parts of the lock and breech-operating mechanism in different conditions.

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

This invention consists in a novel mode of combining the breech-loading fire-arm with and operating the same by means of the hammer; also, in a certain mode of combining the breech with the lock.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the frame, of steel or malleable iron, serving to contain the lock, to carry the barrel B and movable breech C, and to attach the whole to the stock. This frame has provided on its front part a socket, *b*, into which the barrel B is screwed tightly, and behind this socket and below the bore of the barrel the top face, *a a*, of the said frame is made flat and parallel with the bore for the reception of the breech C, which works on the top of the said frame.

The breech C consists of a plate furnished at its front end with a gas-choke, *c*, of any suitable construction, to enter into and close the rear of the barrel; and it has in its rear portion a circular opening to fit an eccentric, D, that is fast upon the pin E, which constitutes the pivot of the hammer F, and to which the hammer is also fast, the said pin being arranged in an upright position perpendicular to the bore of the barrel, and fitted to turn in a bearing provided for it in the frame A.

The breech, so applied, is capable of swinging in a direction lateral to the stock and barrel of the gun, to open the bore at the rear for the reception of the charges, and to close it again after the insertion thereof, the said swinging movement being produced by the turning of the hammer-pin E and eccentric D, the breech being attached to the eccentric by means of a screw, *d*, screwing through the back of the breech and entering a groove, *e r*, in the periphery of the eccentric. This groove *e r* is long enough to allow the pin E and eccentric a sufficient amount of movement independently of the breech to permit the action of the hammer, and to produce the necessary forward and backward movement of the breech to place the gas-choke *c* within and withdraw it from the barrel. The extent of the swinging movement of the breech itself is regulated by a pin, *f*, screwed or otherwise inserted through and secured in it, and entering a groove, *g h i*, in the top of the frame A. The part *g h* of this groove is of the form of an arc described from the axis of the pin E, and the part *h i* has a forward direction, the points *g* and *h* serving as stops to the pin *f*, and so controlling the extent of swinging movement of the breech, and the part *h i* permitting the forward movement.

On the lowest part of the pin E is formed or secured the tumbler G, which is of cylindrical form, and has provided in it a square notch, *j*, for the reception of the front of the trigger H, which is of usual construction and applied in the usual manner. Above the tumbler the said pin E is made of flat form, (best illustrated in Figs. 4 and 5,) and upon this flattened portion of the said pin the main springs I I act to produce the blow of the hammer and to assist in operating the breech, as will be presently described. These springs, two in number, are applied, as shown in Figs. 4 and 5, to press on opposite sides of the flattened portion *k* of the pin E. The arrangement of this portion *k* relatively to the hammer is such that when the hammer is upon the nipple the springs press directly against the flat sides, as shown in Fig. 5, and exert no tendency to turn the pin; but as the hammer is drawn back the corners of the said portion *k* are brought against the springs, as shown in Fig. 4, which represents the position of the pin when the hammer is cocked and



the springs are caused to be strained, and their pressure upon the corners then tends to throw the hammer upon the nipple. Both springs have the same action, and hence a single spring of great strength may be used; but I prefer to use the two.

The operations of loading and discharging are as follows: To open the breech, the hammer is drawn back, as in cocking it, and a finger is pressed against the trigger to draw it back sufficiently to allow the cock-notch *j* to pass it and the trigger to be drawn back beyond the cocked position. During the first part of this movement the eccentric *D*, which always moves with the hammer by reason of both being fast upon the pin *E*, draws the breech back a little way, as shown in Fig. 2, which represents the position of the parts when the hammer is cocked, and the continued drawing back of the hammer continues, drawing back the breech until the gas-choke *c* is entirely withdrawn from the barrel and the breech is free to swing aside, when the arrival of the end *r* of the groove in the eccentric in contact with the screw *d* causes the breech to move with the hammer and to be swung aside by the continued drawing back thereof. In the above movement the pin *E* makes considerably more than a quarter of a revolution, and the flattened portion *k* passes the position in which it stands directly across between the mainsprings, just as the breech is drawn back far enough to clear the barrel, and after it has passed this position the springs act upon it to turn the pin in the opposite direction to that in which they previously tended to turn it; and hence as soon as the hammer has been drawn back to the position just above mentioned the breech will be thrown aside to the position shown in Fig. 3 by the action of the mainsprings. When the breech has thus been moved aside far enough to afford proper facility for the insertion of the charge at the rear of the barrel, it is stopped by the pin *f* coming in contact with the end *g* of the slot in the frame *A*. To close the breech, the hammer *F* is now pushed forward toward the nipple, and the breech is caused to move with it by the friction between the point of the screw *d* and the bottom of the groove *e r*,

which is rather full toward the end *r*; but when the pin *f* arrives in contact with the point *h* of the groove in the frame *A* the breech is stopped in its swinging movement, with its gas-choke directly opposite the barrel, and the continued movement of the hammer in the same direction causes the eccentric to move the breech forward, the springs *I I* commencing to assist such movement after the flat portion *k* of the pin *E* passes the transverse position. In this movement the hammer is stopped on the arrival of the notch *j* opposite the trigger by the latter slipping into the said notch, and so cocking the hammer. On pulling the trigger to fire, the movement of the hammer to strike the priming is accompanied by a slight further forward movement of the breech produced by the movement of the eccentric.

I prefer to use, in connection with this mode of applying and operating the breech, an expanding gas-choke or ring attached to the breech and entering the barrel, or vice versa.

Having thus described my invention, I will proceed to state what I claim as new—

1. In combination with the breech *C* and eccentric *D*, applied as described, the hammer *F*, secured to the eccentric for the purpose of enabling the breech to be operated by the movements of the hammer, substantially as herein specified.

2. In combination with the hammer *F*, eccentric *D*, and breech *C*, the main spring or springs *I I*, so applied in relation with a flattened portion, *k*, of the hammer-pin that the said spring or springs serve not only to produce the blow of the hammer, but to assist in operating the breech, as herein set forth.

3. The cylindrical tumbler *G*, so applied on an upright axis and in combination with the hammer and trigger as to allow the cock-notch *j* to pass beyond the trigger and the hammer to be thrown back for the operation of the breech beyond the position in which it is cocked, substantially as herein specified.

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Witnesses:

D. W. C. PERRY,  
A. O. SPENCER.