2 Sheets—Sheet 1.

A. J. H. HILTON.

Breech-Loading Fire-Arm.

No. 66,709. Patented July 16, 1867.

Fig. 1.

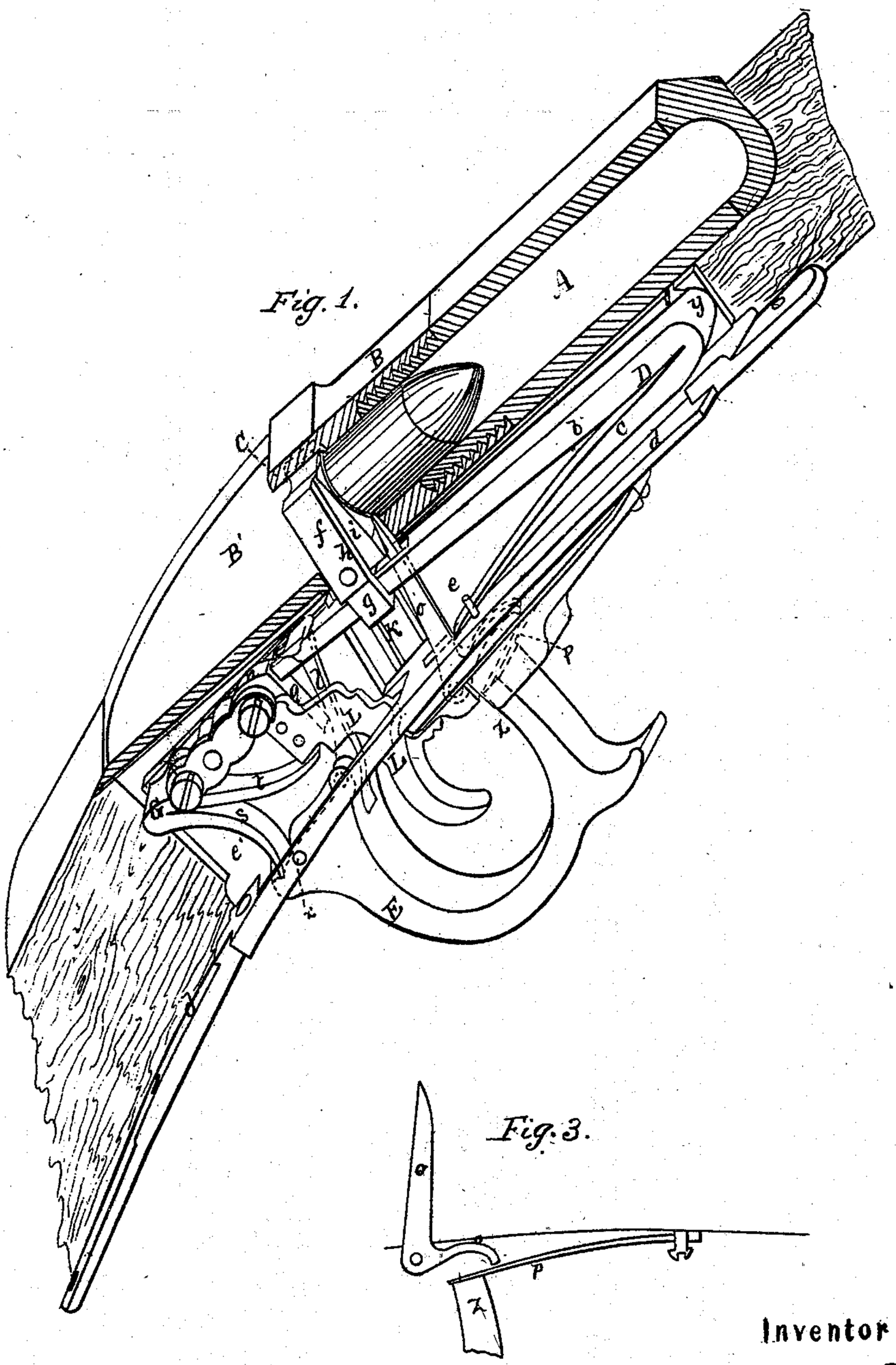

Fig. 3.

Witnesses

Joseph A. Robbins

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2 Sheets—Sheet 2.

A. J. H. HILTON.

Breech-Loading Fire-Arm.

No. 66,709. Patented July 16, 1867.

Fig. 2.

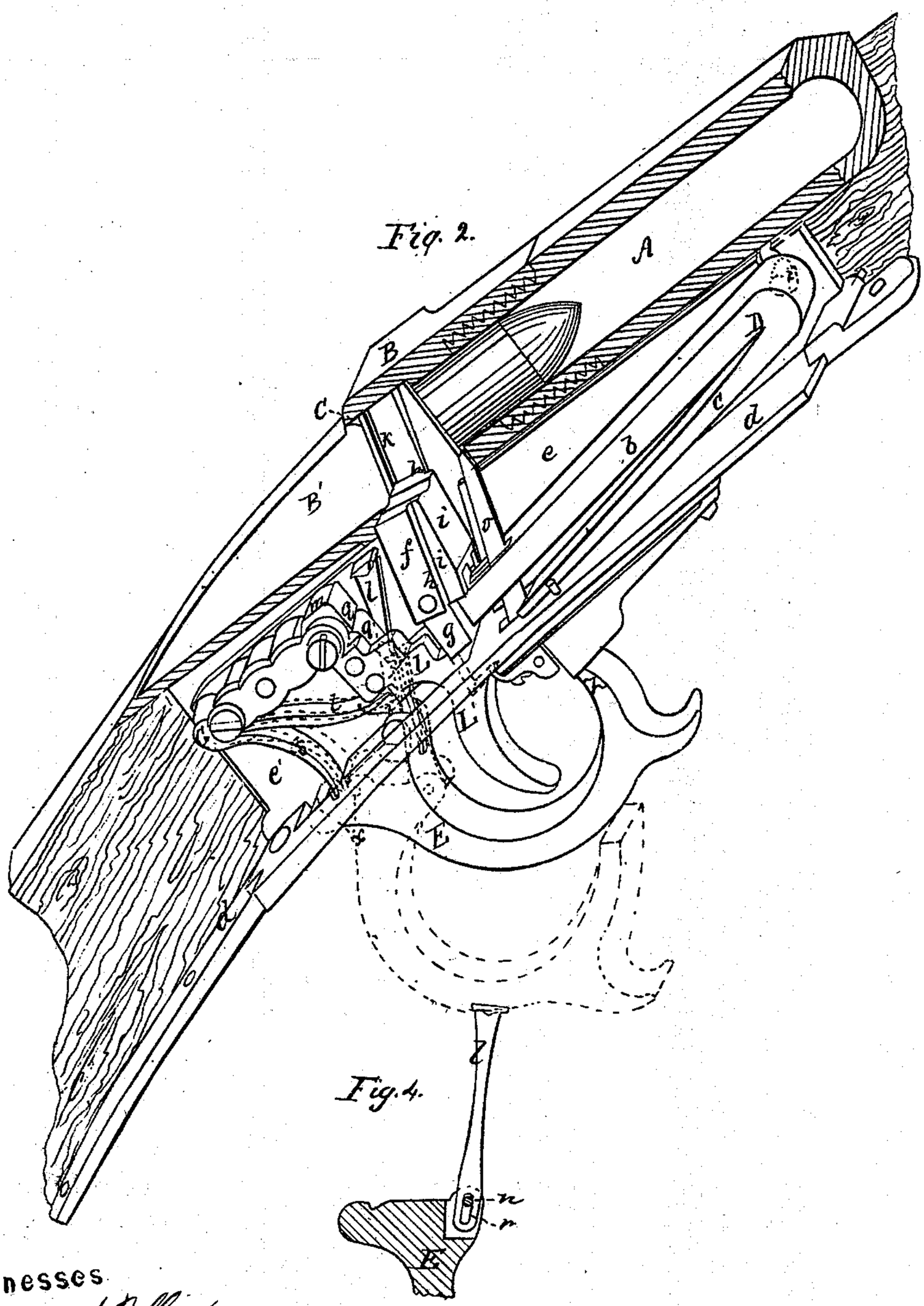

Fig. 4.

Witnesses

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United States Patent Office

ALEXANDER J. H. HILTON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO JOSEPH A. ROBBINS AND WILLIAM L. THOMPSON.

Letters Patent No. 66,709, *dated July* 16, 1867.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, ALEXANDER J. H. HILTON, of Boston, in the county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in Breech-Loading Fire-Arms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a longitudinal vertical section of a gun and stock, showing the lock and cartridge in perspective with the breech closed.

Figure 2 represents a longitudinal vertical section of the same with the breech open.

Figures 3 and 4 are details of portions of the gun-lock.

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

The object of my invention is to provide a breech-loading fire-arm which shall combine the following advantages: rapidity with which it can be discharged, certainty of exploding each and every cartridge used, freedom from fouling, facility of adaptation to the ordinary muzzle-loading arm by altering the latter, safety in handling or carrying while loaded, and the ease with which it is loaded and discharged, there being no necessity of changing the position of the gun during the operation of loading and firing.

And the invention consists in so constructing the breech-block and combining it with the operative parts that the operation of loading and firing will only require three distinct motions of one hand, while the piece is held at the shoulder, in the position for firing, by the other hand.

The invention also consists of a breech-block fitted to move obliquely within the breech-piece, and having its front face at a right angle with the axis of the barrel, so that as the said breech-block is brought up by the force of the spring to close the breech it will come in contact with the entire rear surface of the cartridge-case, and thus cause the cartridge to explode.

Referring to the drawings, A represents the barrel of the gun, secured to or forming a part of the breech-piece B. B′ is the cartridge-way at the rear of the breech. *d* represents the base-plate, and *e e′* the vertical side plates. D is the main-spring secured at its forward or bent end by a pin to the side plate *e*, its lower arm *c* resting upon the base-plate *d*. *f h i* represent the breech-block resting loosely upon the upper arm *b* of the spring D, near its rear or free end, and to which it is attached by means of a pivoted stirrup, *g*; it is provided with guides *h*, one on each side, that fit in corresponding grooves in the sides of the breech. The said grooves are arranged obliquely to the axis of the barrel, and the face or front side of the breech-block is bevelled from its lower part upwards, so that as it is carried upwards by means of the spring D to close the breech, it will be forced parallely across and against the rear surface of the cartridge-case in such a manner as to cause the explosion of the fulminate which may be contained in any portion of the same.. *l* represents a link or connecting-piece fitting loosely within a slot in the rear of the arm *b* of the spring D, and formed with projections or shoulders on its upper end. The lower end of the link *l* is provided with a slot, *r*, in which is fitted a pin, *n*, on the rear portion of the trigger-guard E, as shown in fig, 4, and by means of which the spring D and breech-block *f* are brought down to a position for opening the breech. The trigger-guard E is pivoted to the base-plate *d*, as shown at *x*, and in rear of the pivot is provided with a notch or projection which catches over one arm of the sere-spring G. L L′ represent the trigger-plate and trigger. The upper part of the trigger-plate is attached to or forms a part of a pivoted block or joint, *m*, on the under part of which latter the upper arm *t* of the sere-spring G presses. The front part of the block or joint *m* is provided with a notch or shoulder which serves to hold the end of the arm *b* of spring D in a depressed position after being drawn down by the trigger-guard. Fig. 3 represents a device for ejecting the cartridge-shell when the cartridge has been exploded. It consists of a spring, *p*, attached to the under side of the base-plate *d*, its free end extending to a point over the end *z* of the trigger-guard E, as shown in dotted lines in fig. 1 and in fig. 3. *o* is a bell-crank lever, pivoted to a projection under or on the base-plate *d*; its lower arm *o′* rests upon the front portion of the spring *p*, and its upper arm extends upwards so that its end fits against the inner edge of the cartridge-case rim when the cartridge is inserted within the barrel to be exploded. The free end of the trigger-guard E being allowed to spring forward after drawing down the breech-block and opening the breech, causes the upper end of the bell-crank lever to move backward sufficiently to eject the empty cartridge-shell and throw it clear from the breech.

The operation is as follows: The parts being in the position shown in fig. 1, the guard E is pulled backwards to the position shown in red lines in fig. 2. This will bring down the arm *b* of spring D, together with the breech-block *f*, and thus open the breech. The end of the arm *b* will be caught and retained in the notch or projection on the face of the joint *m*. The trigger-guard is then allowed to spring back and operate the ejecter, as before stated, thus freeing the breech of the empty cartridge-shell. A fresh cartridge is then inserted, and upon pulling the trigger, the arm *b* of the spring is released, causing the breech-block to rise and close the breech and at the same time explode the cartridge.

The construction and operation of the breech-block is such as to effectually guard against the danger of a premature explosion of the cartridge, for if the latter should not be inserted entirely in its place the bevelled face of the breech-block as it rises will gradually move it forward to its proper position. My invention may be easily applied to the ordinary muzzle-loading arm by an inexpensive alteration of the latter.

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

1. The breech-block *f h i*, constructed as described, and moving obliquely to the axis of the barrel so as to simultaneously close the breech and explode the cartridge, substantially in the manner set forth.

2. I claim the lever *o o'*, operated by the forward or returning movement of the trigger-guard E, for the purpose of ejecting the empty cartridge-case, substantially as described.

3. I claim the combination of the sere-spring G, with the trigger L L', and trigger-guard E, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

A. J. H. HILTON.

Witnesses:

J. H. ADAMS,

DAVID KELLEHER.