

H. HAMMOND.

PATENTED MAR 14 1871

Improvement in Breech-loading Fire Arms.

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Fig. 1.

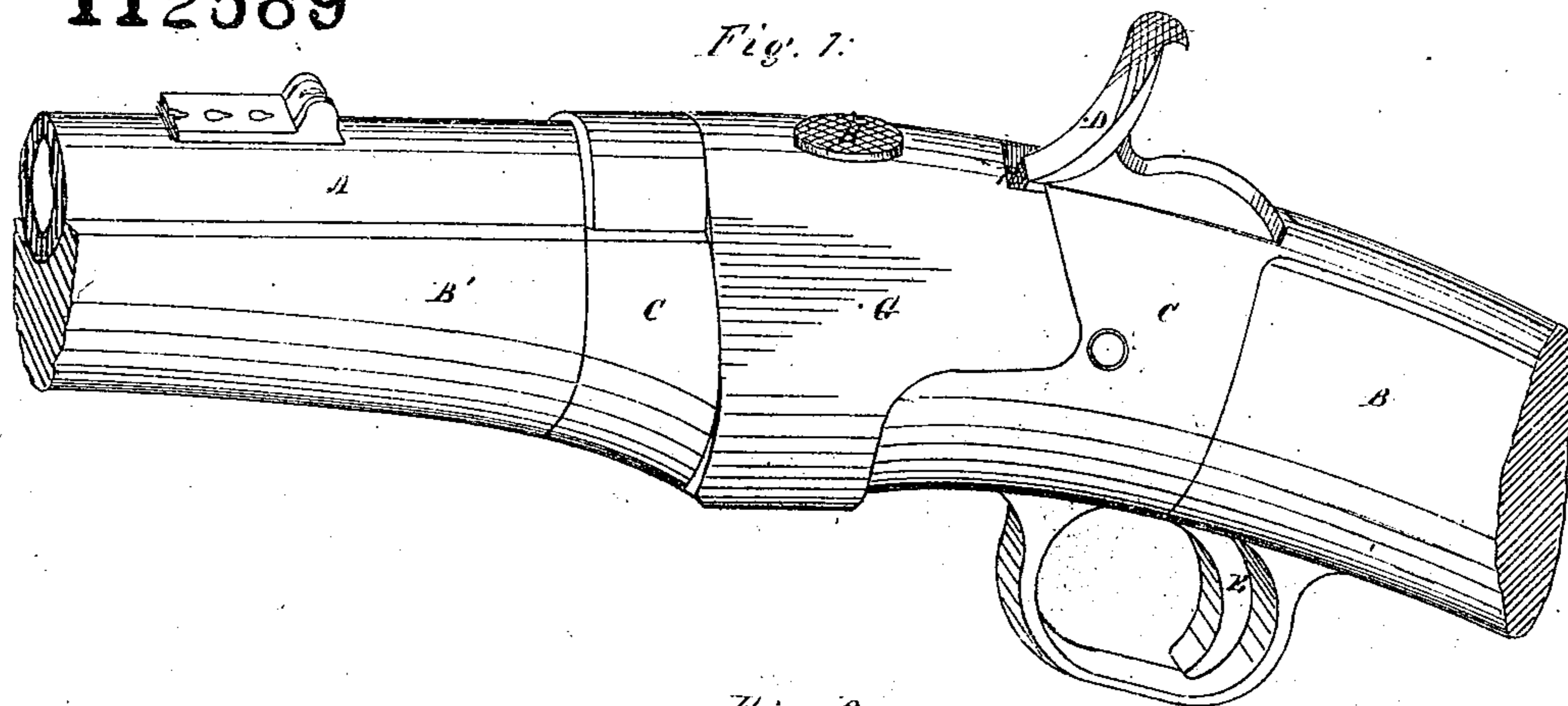


Fig. 2.

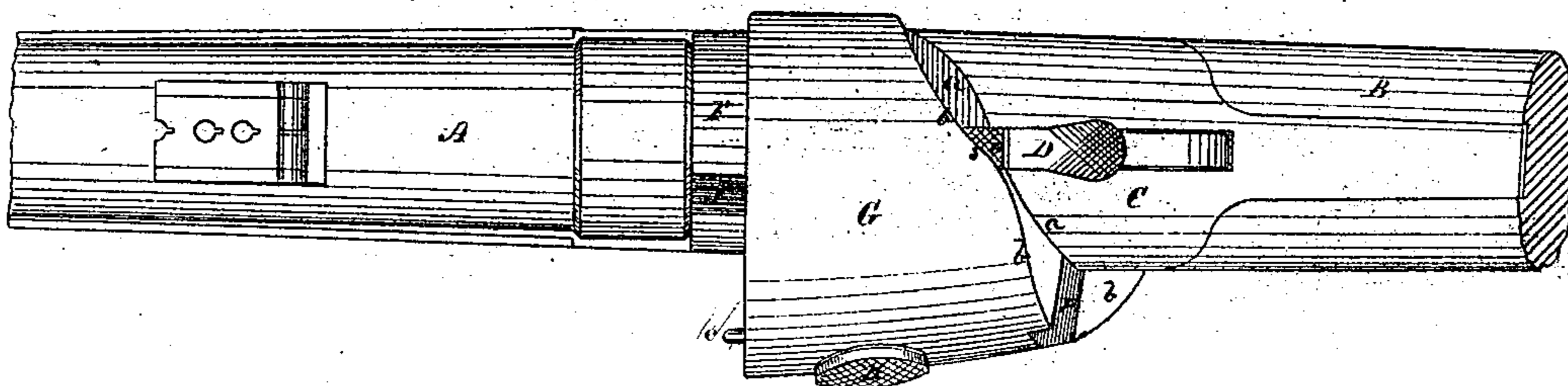


Fig. 3.

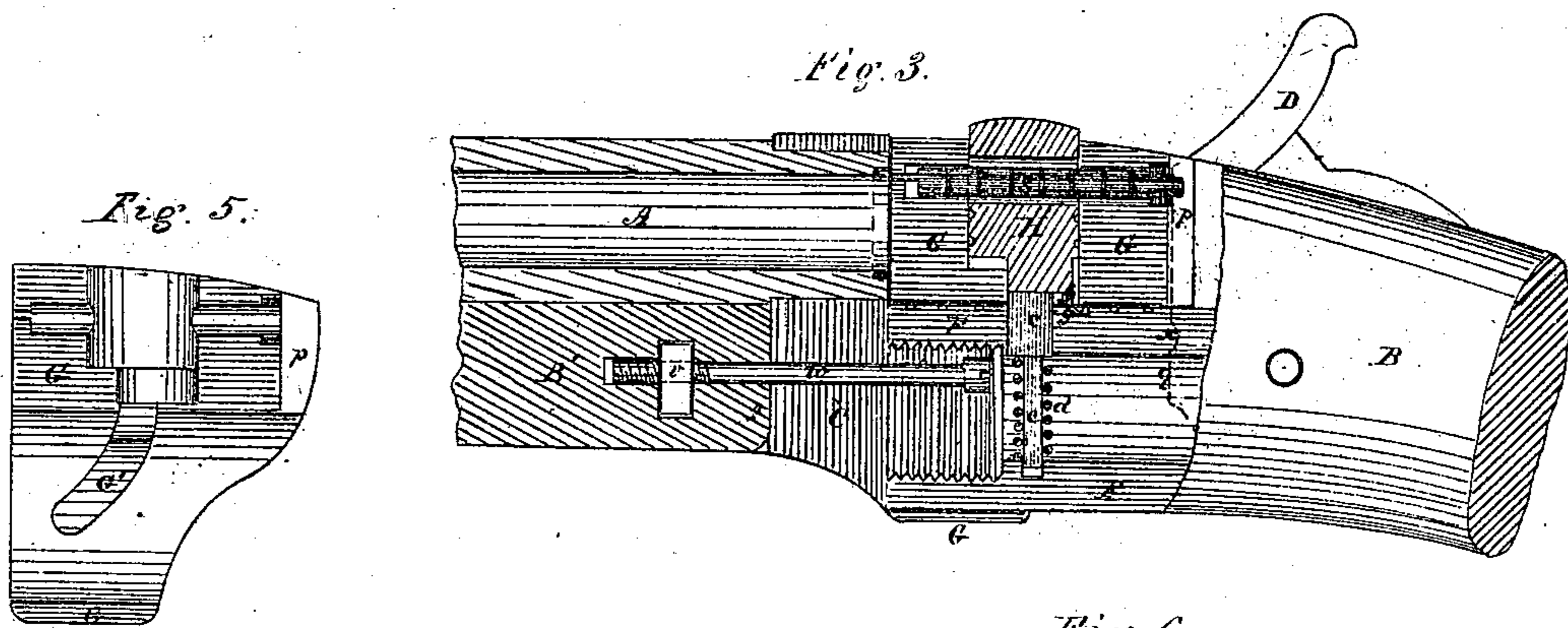


Fig. 5.

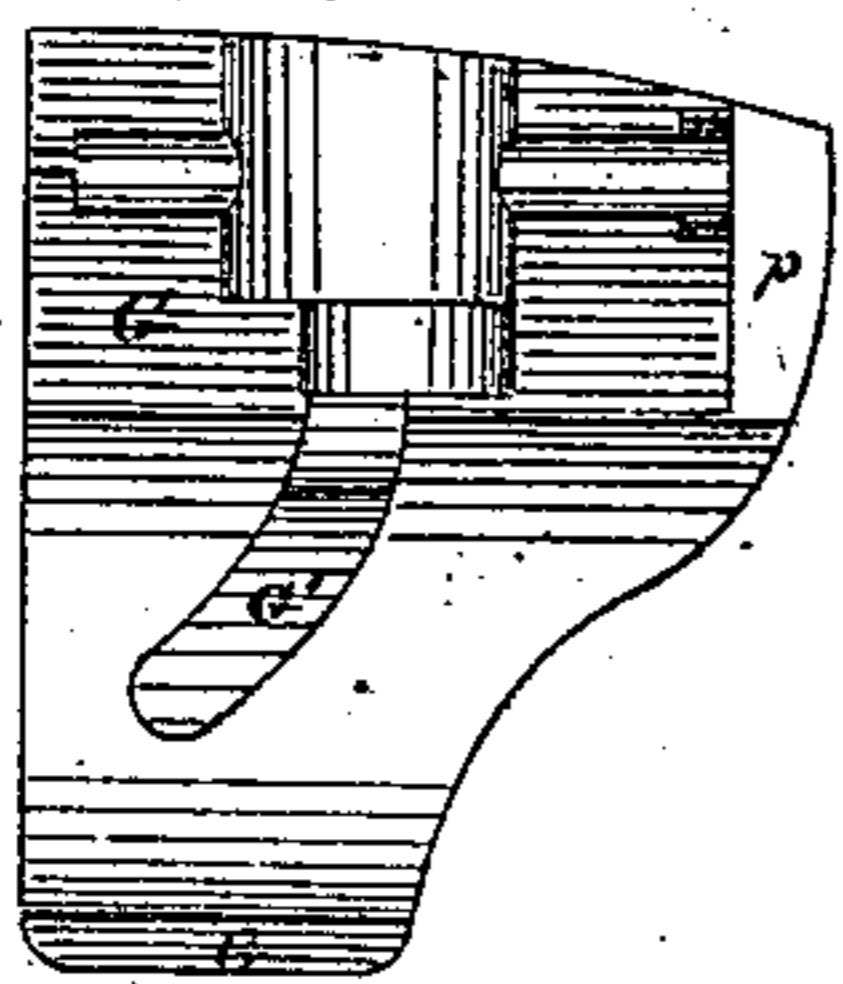


Fig. 4.

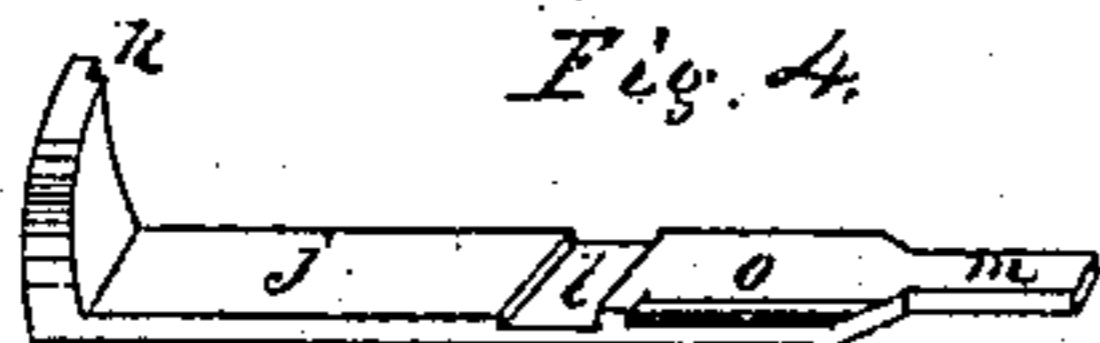
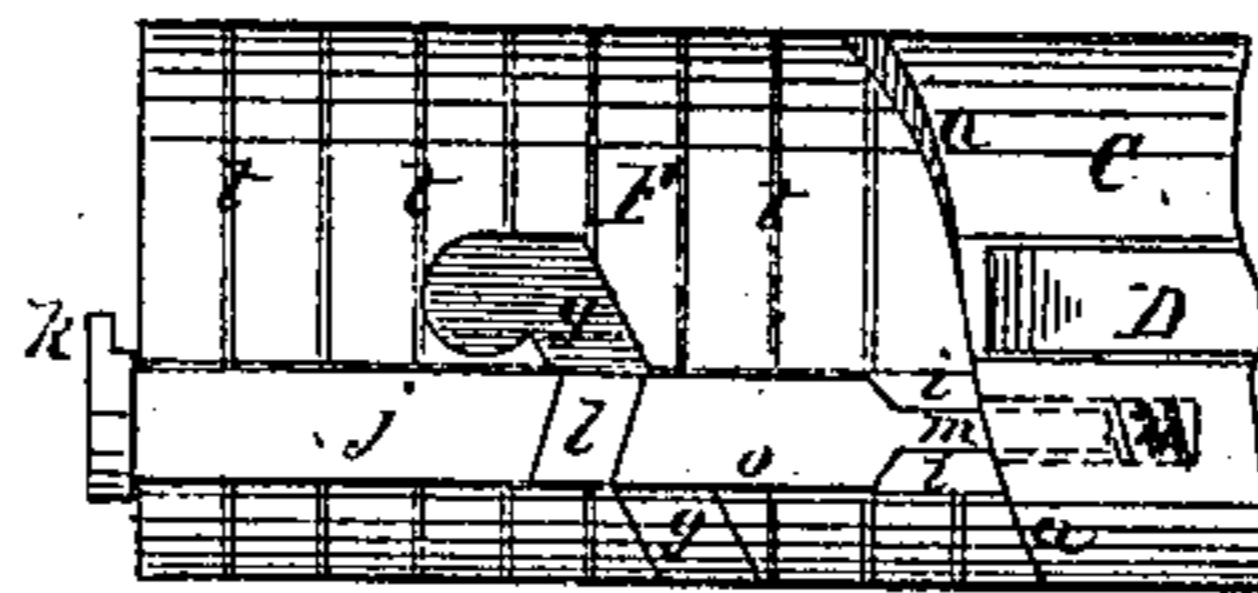


Fig. 6.



Witnesses.

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Letters Patent No. 112,589, dated March 14, 1871.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

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

To all whom it may concern:

Be it known that I, HENRY HAMMOND, of Hartford, 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 thereof, reference being had to the accompanying drawings making part of this specification and to the letters of reference marked thereon.

Figure 1 represents a side view of so much of the arm as will illustrate the invention, and as it appears when the breech-block is closed and the hammer down.

Figure 2 represents a top view, with the breech-block swung open and the hammer drawn back, as when prepared for receiving a cartridge.

Figure 3 represents a vertical section through the arm, so as to show the parts within.

Figures 4, 5, and 6 represent details of the arm, which will be more particularly referred to in the description.

Like letters refer to the same parts in all the figures.

My invention consists in combining with a breech-block that moves laterally and obliquely rearward in opening and closing the breech, an ejector, operated by said breech-block in a right line for drawing out the empty cartridge-case; also, in so controlling the movements of the breech-block and of the ejector that the breech-block shall move first and then the ejector shall move rearward with a more rapid motion than the breech-block, until the empty case is drawn out, when the ejector is tripped and flies back, while the breech-block may remain stationary and open, so as to reload the arm; and

My invention further consists in causing the nose and heel of the hammer, when down, as in the act of firing, to aid the locking-bolt in holding the breech-block against any accidental opening by the recoil of the discharge, and make it more firm and secure.

My invention further consists in making the hammer of such a form that, when at half-cock, it cannot be moved when the breech is opened, and, when at full cock, it cannot be snapped when the breech is open; and

My invention further consists in serrating or roughening the breech-block and the hammer at the points where they would touch each other when the former is swung open, and the latter accidentally or otherwise let down against it, to prevent an accidental discharge should the breech-block be closed without cocking the hammer, which the said serrations prevent being done.

To enable others skilled in the art to make and use my invention, the following description is given, with references to the drawings.

A represents the barrel;

B, the stock;

C, the stock-frame;

D, the hammer; and

E, the trigger of the arm.

The barrel and stock of the arm are connected by the piece F, which forms a journal for the breech-block G to move, and be supported and be locked upon.

On the frame C there is formed the cam-plane *a*, and on the rear of the breech-block G there is formed a similar cam-surface, *b*, so that, when the breech-block is swung to the left to open the bore of the gun, it will also have an oblique rearward movement, and when moved to the right to close the bore, it will have a forward oblique movement.

Through a vertical opening in the breech-block is placed a thumb-piece, H, which fits over a locking-bolt, *c*, so that by pressing upon the thumb-piece when the breech is closed the bolt *c* may be pressed down against the spring *d* to unlock the breech-piece and allow it to be moved.

When the breech-block is unlocked and turned to the left the bolt *c* enters the spiral groove *G'* upon the inside surface of the breech-block, (see fig. 5,) and serves as a guide to force the said block to the rear, keeping it in contact with cam-plane *a* above described.

Through the breech-block and through the thumb-piece passes the firing-pin *e*, that transmits the blow of the hammer to the cartridge, the opening through the thumb-piece being of a suitable form to admit of its necessary vertical motion.

On the lower end of the thumb-piece H there is a projection, *f*, that works in a groove, *g*, cut in the piece F.

There is also cut in the piece F a longitudinal slot, *i*, parallel with its axis, in which the ejector *j* works.

This ejector, as more distinctly seen in fig. 4, has a lip, *k*, upon its forward end, for catching hold of the flange of the cartridge-case to draw it out.

It has also an oblique groove, *l*, cut across its upper side, and a reduced portion, *m*, which works against a spiral spring, *n*, held in a socket in the frame C.

The part *o* of the ejector is beveled off for a purpose that will be explained.

When the thumb-piece H is pressed down it also presses down the locking-bolt *c*, and by turning the breech-block to the left the projection *f* takes the groove *l* in the ejector and draws it back against the spring *n*, and thus withdraws the empty cartridge-case from the bore of the barrel.

When the projection *f* has passed through the slot *l* the spring *n* suddenly shoots the ejector forward into its position for catching forward of the rim of the next cartridge placed in the arm.

When the breech-block is turned to close the breech

of the arm, the projection *f* rides over the beveled surface *o* of the ejector without catching upon it.

When the breech-block has arrived at its closed position the locking-bolt *c* passes out from the groove *G'* and springs upward, which locks the breech-block in its position.

The hammer *D* is so made as to enter the breech-block at *p*, fig. 1, and the frame as shown by the dotted line at *q*, fig. 3, so as to afford greater strength in sustaining the strain occasioned by firing heavy charges; and it is also so shaped that, when the block stands open, the heel of the hammer *q* prevents it from being snapped.

The hammer and the rear end of the breech-block, at *r* and *s*, fig. 2, are checked or serrated at the points which come in contact when the block is open, or partly so, so that if the hammer be allowed to rest upon the breech-block it will prevent the block from being pushed to a closed position, which might allow the hammer to fall with sufficient force upon the firing-pin to ignite the charge.

When the hammer is at half-cock the corner of the breech-block next to the piece *F*, on the upper side, passes into the notch *x*, fig. 3, which holds the hammer from being either cocked or let down until the breech is closed.

The friction-surface *t* of the bearing *F*, (see fig. 6,) on which the breech-block turns, is grooved, as also is the surface of the thumb-piece *H* and that of the firing-pin *e*, for the purpose of lessening the friction and affording better means for retaining the lubricating material.

The front part of the stock *B'*, at the joint between it and the frame *C*, is liable to shrink and leave an open joint. To remedy this I insert a nut, *v*, in the wood of the stock, and pass a screw-bolt, *w*, from the frame into this nut, so that the stock may at any time be drawn up tight against the frame.

Claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the breech-block *G*, the thumb-piece *H*, with its projection *f*, and the ejector *j*, constructed and arranged substantially as herein described.

2. The combination of the projection *f* for operating the ejector, the oblique slot *l*, whereby the ejector is moved rearward more rapidly than the breech-block, and the beveled edge *o*, for allowing the projection *f* to pass over the ejector, substantially as herein described.

3. The peculiar form given to the heel *q* of the hammer, which, in connection with the breech-block, prevents its being snapped when at full-cock and the breech is open, the notch *x*, which will allow the breech-block to pass when the hammer is at half-cock, and prevent the hammer being moved when the breech is open, substantially as herein specified.

4. The checked or serrated rear of the breech-block, and the checks or serrations on the front of the hammer at the parts which come in contact when the block is open, or partially so, so that if the hammer is allowed to rest upon the block it will prevent the latter from being closed, substantially as herein specified.

5. The combination of the spiral groove *G'* with the locking-bolt *c*, for the purpose of forcing and guiding the breech-block to the rear, substantially as herein described.

HENRY HAMMOND.

Witnesses:

THEO. G. ELLIS,
ZALMON A. STORRS.