

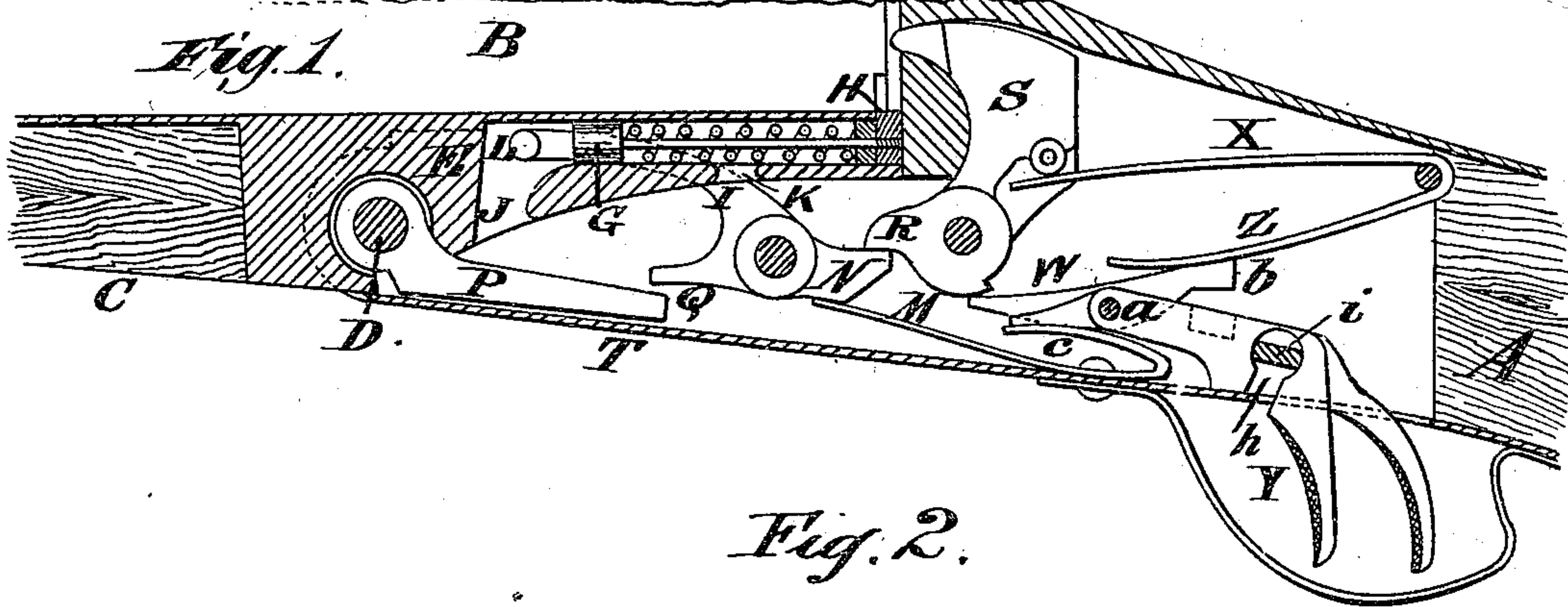
(No Model.)

2 Sheets—Sheet 1.

W. A'C. G. BIRKIN.  
BREECH LOADING FIRE ARM.

No. 355,964.

Patented Jan. 11, 1887.





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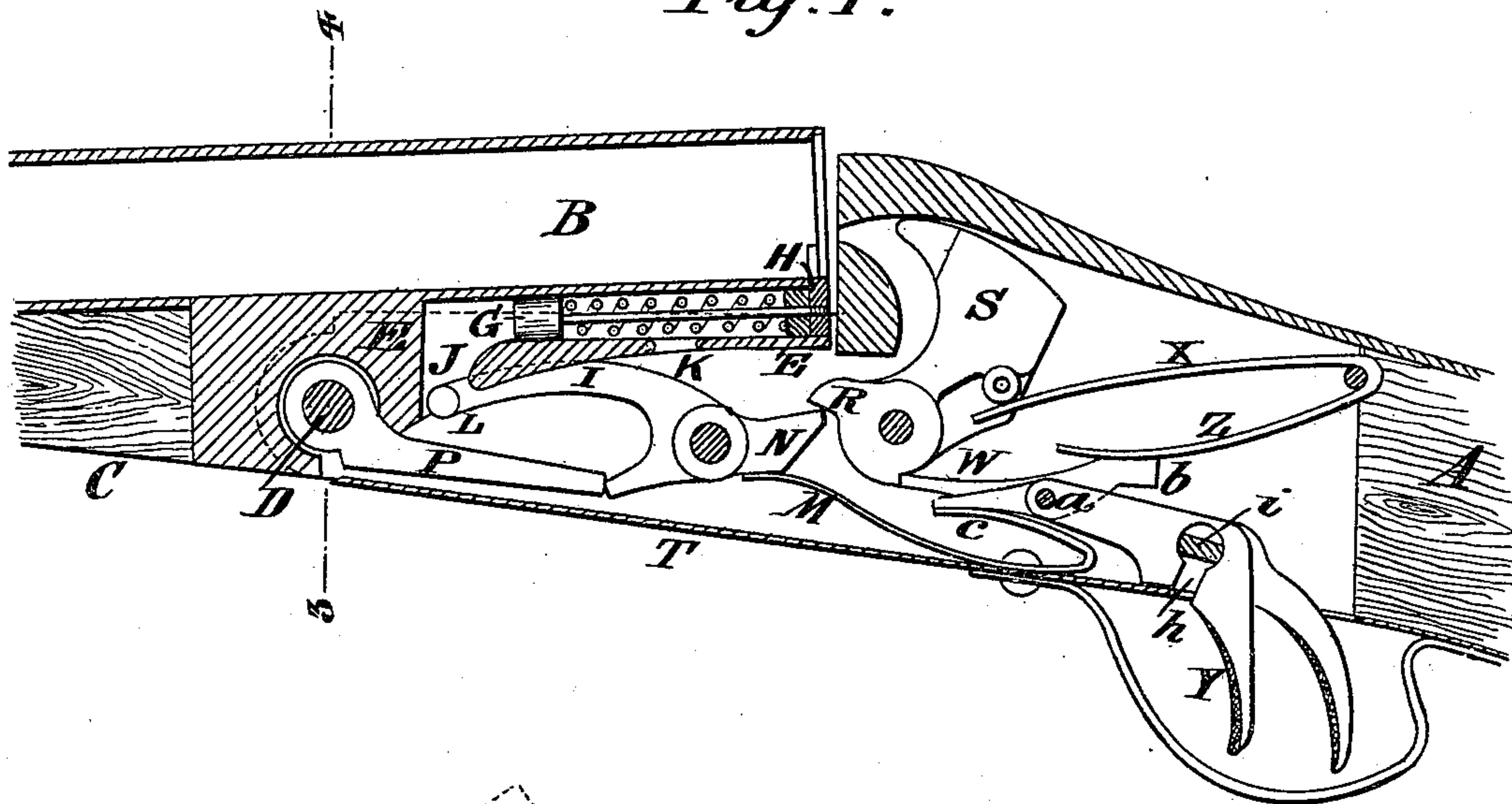
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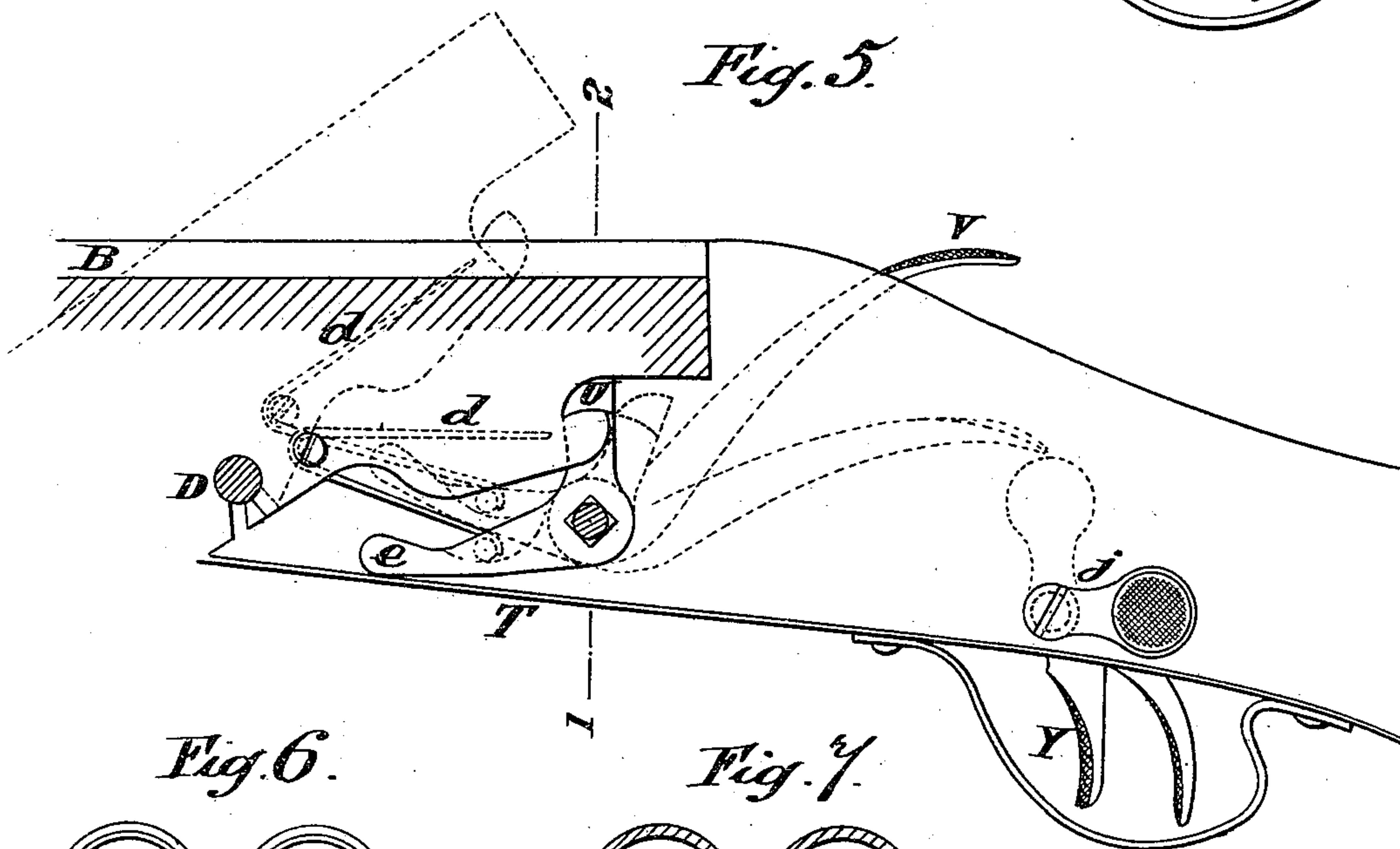
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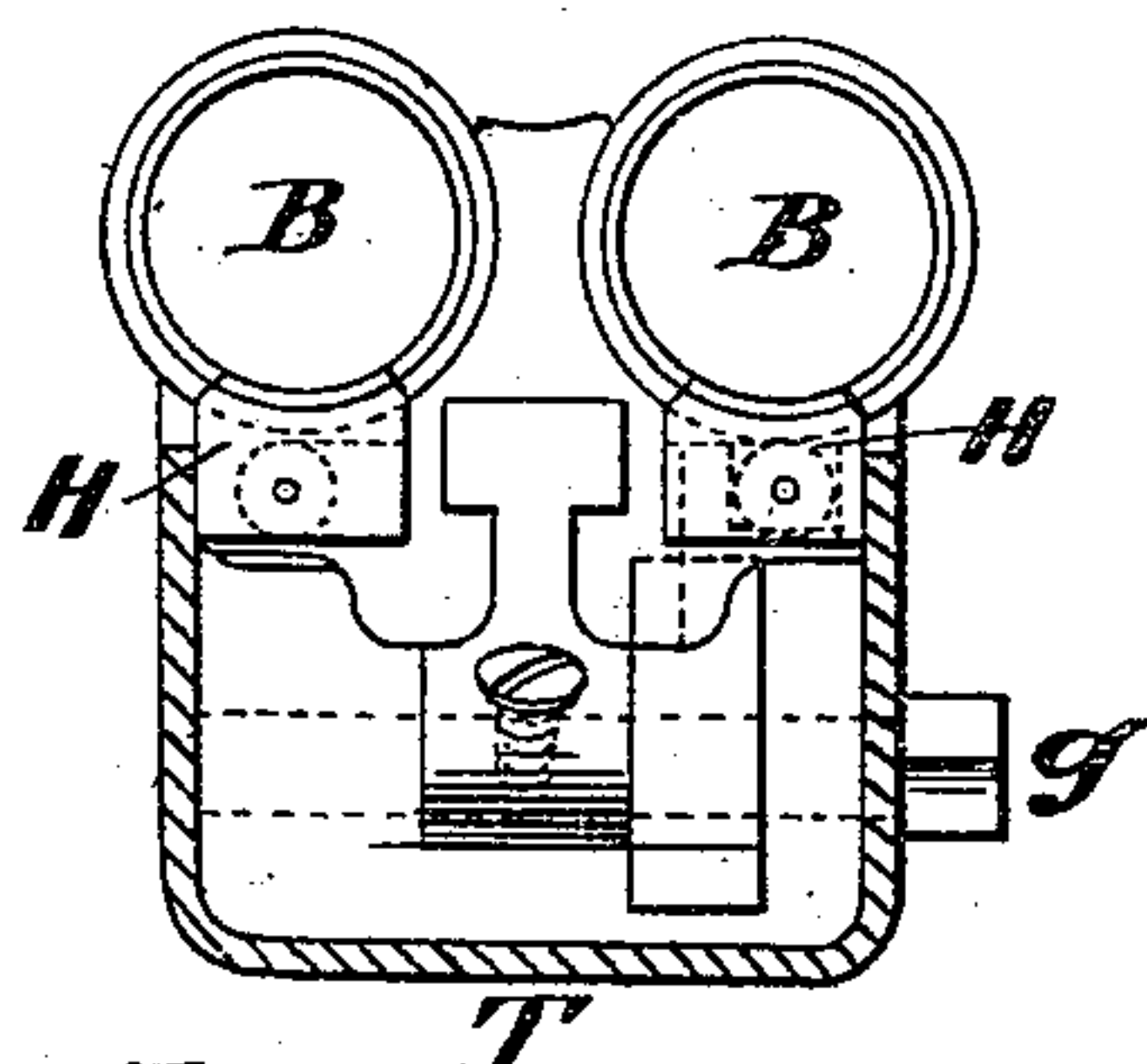
*Fig. 4.*



*Fig. 5.*

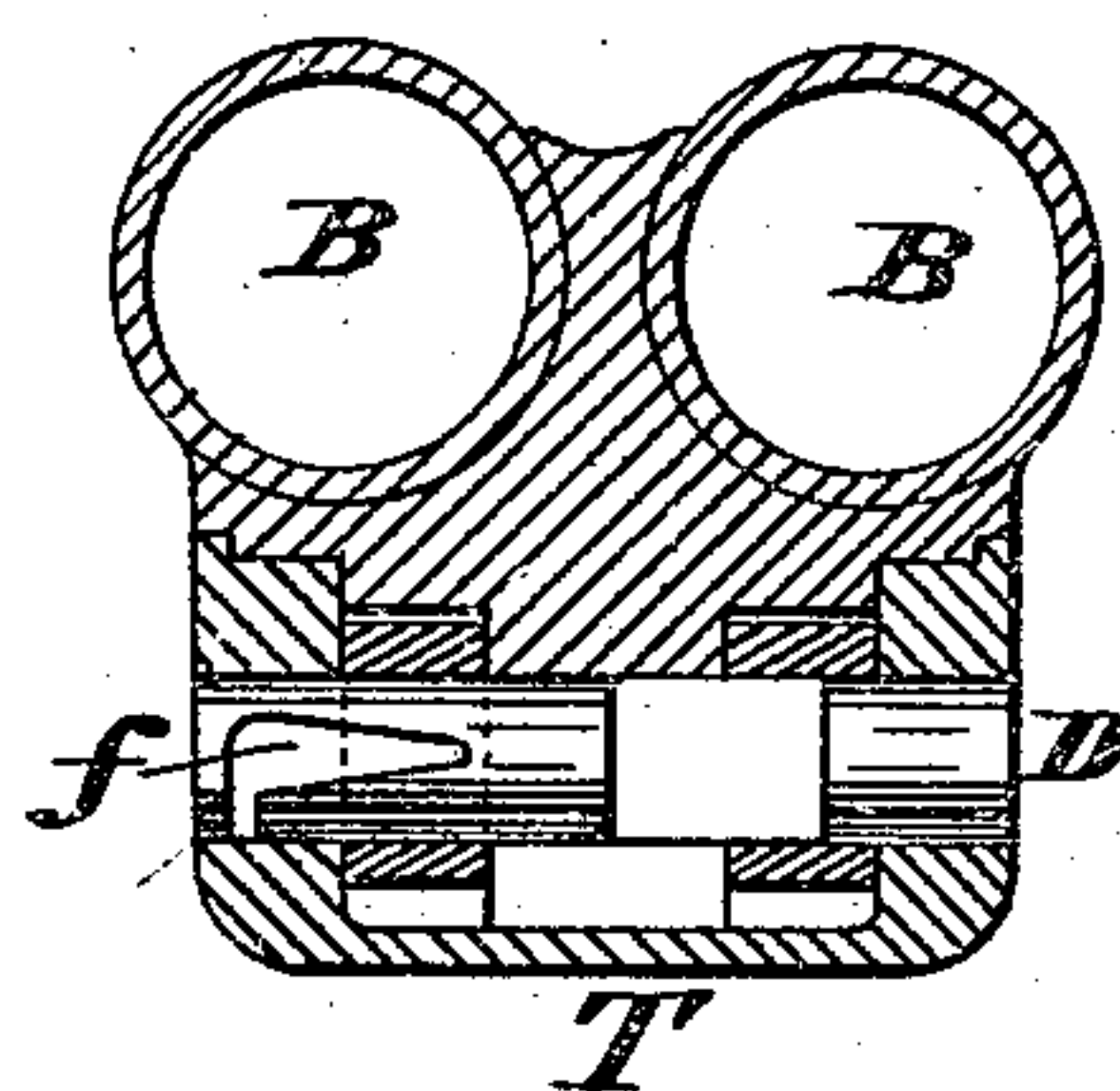


*Fig. 6.*



Witnesses  
Dennis Lumby,  
Robert Everett.

*Fig. 7.*



Inventor.  
William A'Court Granville Birkin.  
By James L. Norris.  
Atty.



# UNITED STATES PATENT OFFICE.

WILLIAM A'COURT GRANVILLE BIRKIN, OF ASPLEY HALL, COUNTY OF NOTTINGHAM, ENGLAND.

## BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 355,964, dated January 11, 1887.

Application filed November 2, 1886. Serial No. 217,822. (No model.) Patented in England January 15, 1886, No. 659.

*To all whom it may concern:*

Be it known that I, WILLIAM A'COURT GRANVILLE BIRKIN, a subject of the Queen of Great Britain, residing at Aspley Hall, Nottinghamshire, England, have invented certain new and useful Improvements in the Actions of Breech-Loading Sporting-Guns and in Appliances for Automatically Extracting the Empty Case or Cases, (for which I have obtained Letters Patent in England, No. 659, bearing date January 15, 1886,) of which the following is a specification.

The object of this invention is to make breech-loading sporting-guns, single or double barrel, more effective in their action in opening the breech and ejecting empty cartridge-cases, and also to facilitate disconnecting the barrels from the stock.

The object of my invention I accomplish in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of part of a breech-loading fire-arm illustrating my invention, and showing the position of the parts when the fire-arm is discharged; Fig. 2, a similar view showing the barrel opened and the ejector projected; Fig. 3, a view similar to Fig. 2, showing the ejector retracted; Fig. 4, a view similar to Fig. 1, showing the position of the parts when the barrel is almost closed; Fig. 5, a detail sectional view showing the snap action for locking the barrel; Fig. 6, a transverse sectional view on the line 1 2, Fig. 5; Fig. 7, a similar view on the line 3 4, Fig. 4.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, where—

The letter A indicates the stock, B the barrel, and C the tail-piece.

D is the pin on which the barrel or barrels tilt. The lump E on the under side of the barrel is carried to the extremity of the breech, and has a cylindrical chamber, F, in which a piston or plug, G, of the extractor H moves to and fro in the back direction under the action of a helical spring, and in the other by means of a lever, I, the end of which rides in said chamber F for extraction purposes. The cham-

ber has two openings, J and K, and when the lever I moves in one direction in the opening of the barrels to compress the helical spring, as in Fig. 2, the end L of the lever I, when the barrels are fully tilted, passes out of the opening K, and a spring, M, acting on the tail end N of said lever I, causes it to bear against the lump E, as at Fig. 3, the helical spring at this instant returning the extractor H to its first position, ready for the insertion of a fresh cartridge into the barrel B.

The pin D has a lever, P, whose fore end is in the path of an arm, Q, forming part of the lever I, and when the barrels are being closed said lever P strikes against the arm Q and forces it down, which causes lever N to come into contact with a nose-piece, R, to cock the hammer S, as seen in Fig. 4, and as the breech becomes fully closed the lever P slides past the end Q by putting an extra pressure on the spring M, the end K of the lever I having in the meantime arrived opposite the opening J, and takes up its first position on the bottom of the breech-casing T, as seen at Fig. 1. The end L of the lever I then enters the chamber F and remains there, as at Fig. 1, for the next opening of the breech, this being effected by the tilting of the barrel after the catch U of the snap or lever action V (see Fig. 5) has been operated, the hammer S remaining cocked by the sear W retaining the hammer in that position, and with the mainspring X in tension for the hammer to be released when the trigger Y is next pulled.

The sear W is kept in its notch of the hammer-boss by a tail-piece, Z, of the mainspring X, the sear being on the same pin, a, as that which carries the trigger, and in such a position that when the trigger is pulled the back part, b, of the sear is lifted to release its front end from the notch, whereby the hammer is left free to be forced forward under the action of the mainspring X.

c is the trigger-spring.

If the barrels are sluggish in their tilting action, they can be started in their lift by a spring, d, this being in connection with an arm, e, of a snap action, as at Fig. 5.

A portion of the hinge or tilting pin D, Fig. 5, is cylindrical and a portion flat, and it is provided with a right-angled slot, f, having a



bayonet-joint connection with the lump E, so that when the pin D is turned in one direction it can be drawn outward for the disengagement or separation of the lump E therefrom when the barrels have to be removed, such as for packing them in a gun-case. Instead of drawing the pin outward for this removal, it can be turned by a key acting on the projecting part *g* to bring the flat portion round for the release of the barrels.

The trigger Y is formed with a cylindrical aperture and a slot, *h*, leading therefrom. In this cylindrical aperture a rectangular stem, *i*, of a safety-bolt, *j*, is fitted, and when the bolt *j* is in the position indicated by full lines in Fig. 7 the stem *i* lies across the slot *h* and prevents the trigger being moved; but when the locking-bolt *j* is pushed round into the position indicated by dotted lines the narrow part of the stem *i* is brought opposite the slot *h*, so that the triggers can be pulled for the firing.

The lever P has an important function to perform in connection with the extracting of the cartridge. It moves with the barrel in the opening operation, and as it does so, it lifts the arm Q and forces the end L of the lever I along the chamber F, and brings said end L into contact with the piston G, but not until the breech end of the barrel is sufficiently clear of the breech-face to push the extractor outward. In the continued upward movement of the breech end of the barrel the lever P continues to lift the arm Q, and just as the barrels are fully opened the end of P escapes Q and the end L of the lever I comes out of the opening K, when the spring M forces it against the curved part at the bottom of the lump E, at which instant the extractor returns to its first position, ready for the insertion of a fresh cartridge into the barrel. The barrels are then depressed, and the end I rides along the curved part toward the opening J at the same time the lever P strikes upon the arm Q, and as the barrels continue their motion for closing the arm Q is pressed down sufficiently far for the lever P to pass it. It is during the pressure of P upon Q that the tail-piece N cocks the striker, the spring M retaining N in contact until the next discharge

takes place, the forward movement of the hammer pressing down the tail-piece N and putting the end L of the lever I into the chamber F, so that the next time the barrel is opened the end L rides along the chamber for the extraction, as before mentioned.

I claim as my invention—

1. The combination, with the hinged barrel carrying a spring-retracted ejector, of a lever, P, swinging with the barrel, the pivoted ejector-operating lever I, having the arm Q and tail-piece N, and the hammer S, having a nose-piece, R, whereby in opening the barrel the pivoted lever projects the ejector and in closing the barrel cocks the hammer, substantially as described.

2. The combination, with the stock A, the barrel having the chambered lump E, the spring-retracted ejector moving in said chamber, and the hinge-pin D, of the lever P, mounted on the hinge-pin, the pivoted ejector-projecting lever I, having the head-piece L, the arm Q and the tail-piece N, and the hammer S, having a nose-piece, R, acting on the tail-piece of the ejector-projecting lever, substantially as described.

3. The combination, with the stock A and the barrel B, having the lump E, of the rotatable hinge-pin D, having a bayonet-joint connected with the lump, substantially as and for the purpose described.

4. The combination, with the trigger having the circular orifice and the straight-edged slot *h* leading therefrom, of the swinging safety-bolt *j*, having a rectangular stem, *i*, engaging the circular orifice in the trigger and adapted to be turned by the bolt to bring its narrow part into and out of coincidence with the slot leading from said circular orifice, for locking and unlocking the trigger, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM A'COURT GRANVILLE BIRKIN.

Witnesses:

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