

A. T. FREEMAN.

Breech-Loading Fire-Arms.

No. 133,770.

Patented Dec. 10, 1872.

Fig. 1

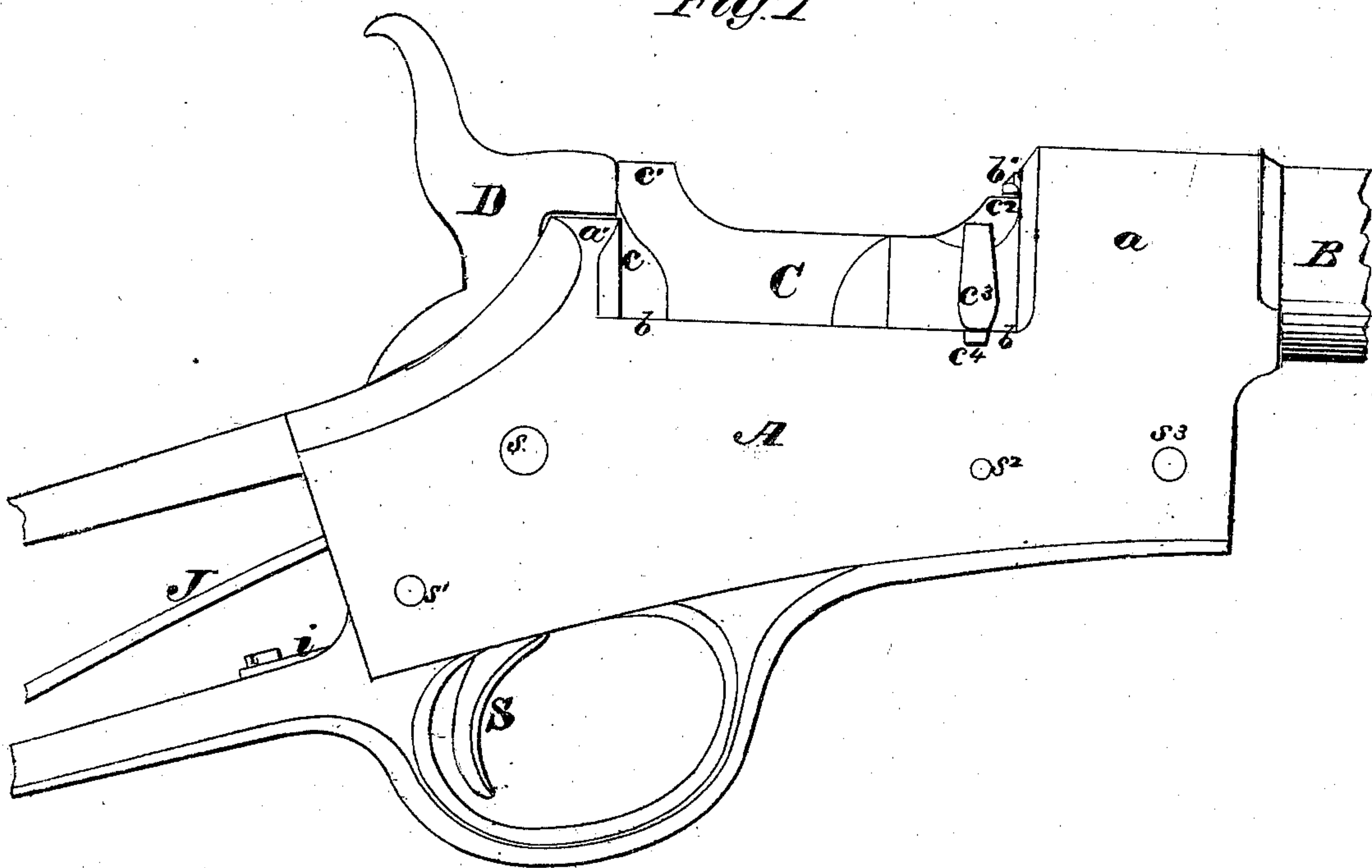


Fig 2

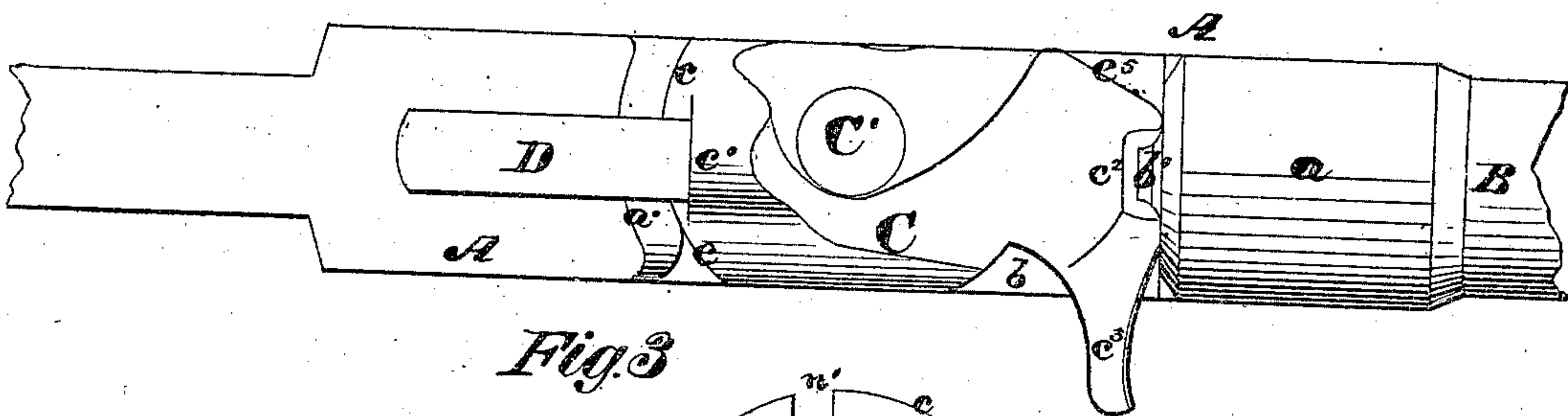
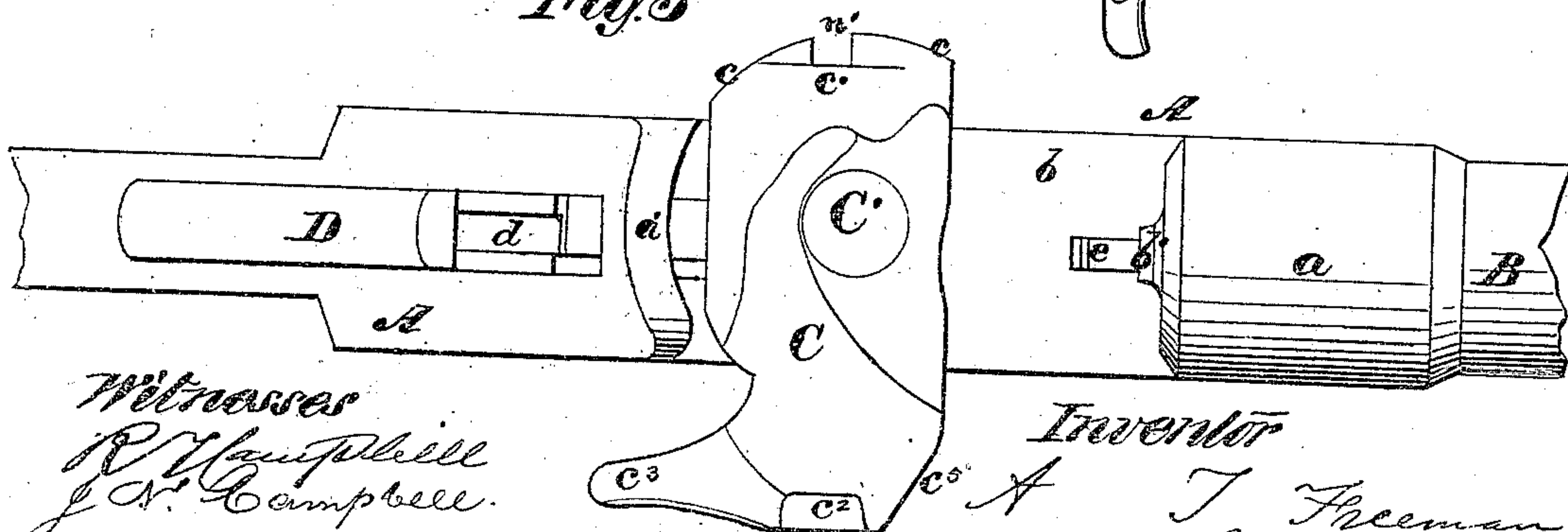



Fig. 3



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Fig. 4

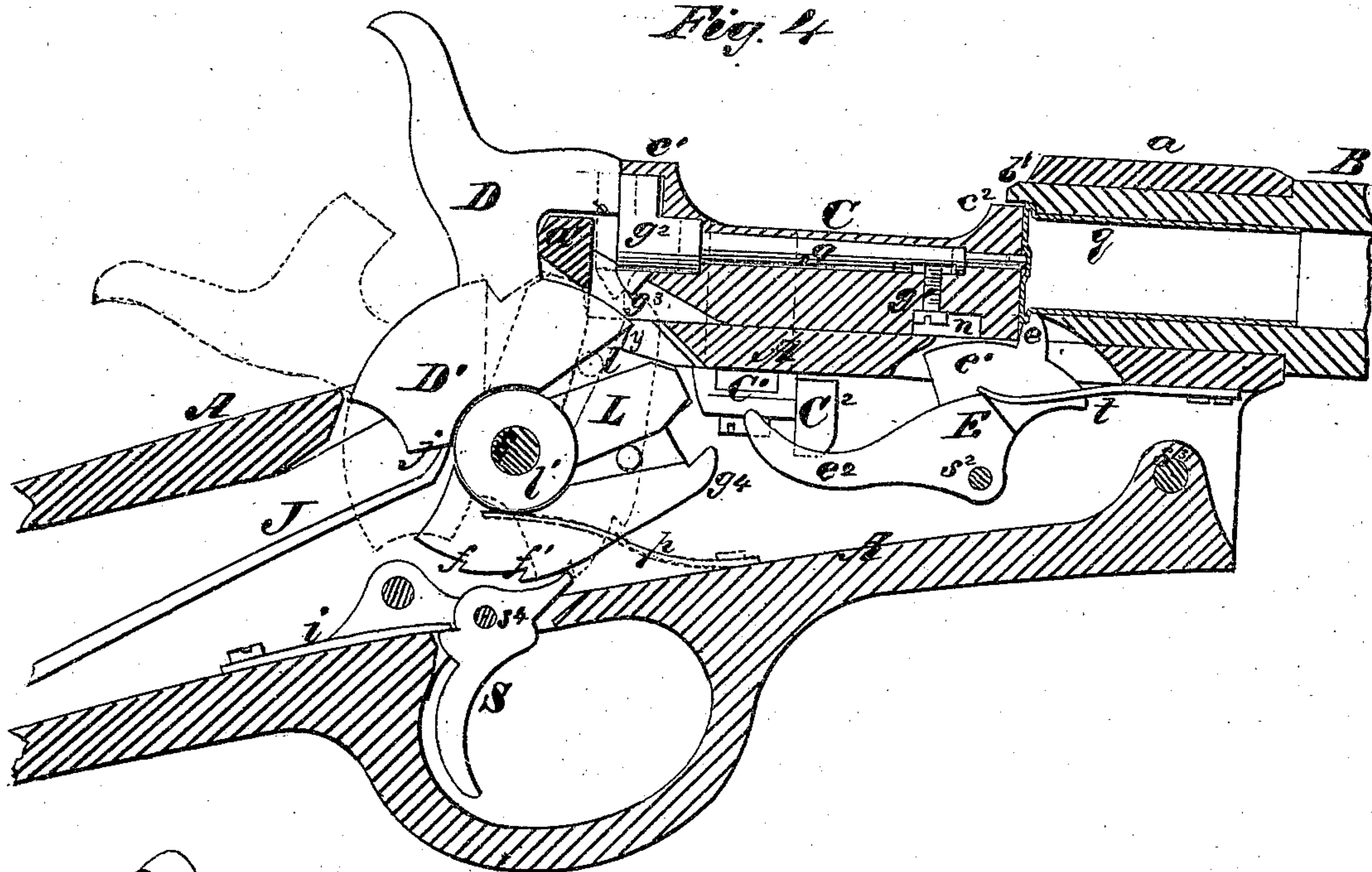


Fig. 8

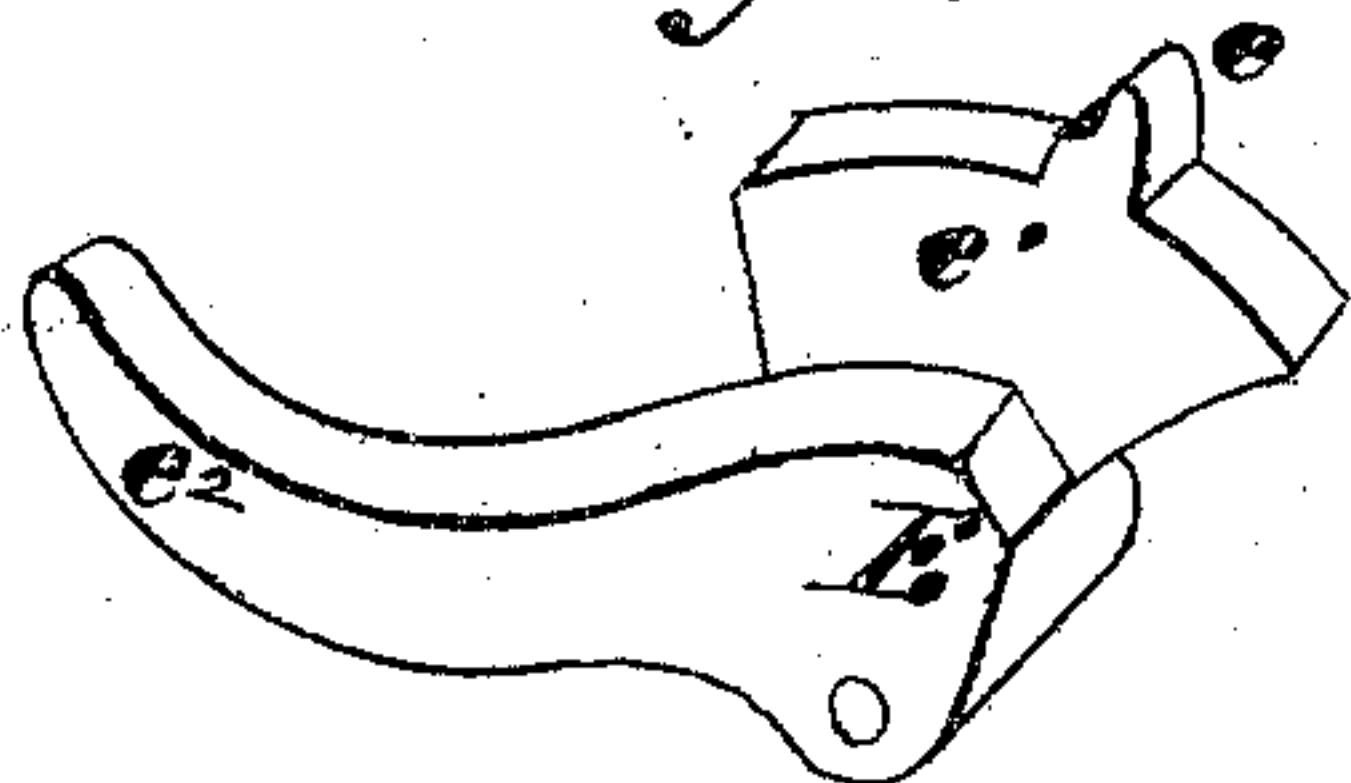


Fig. 5

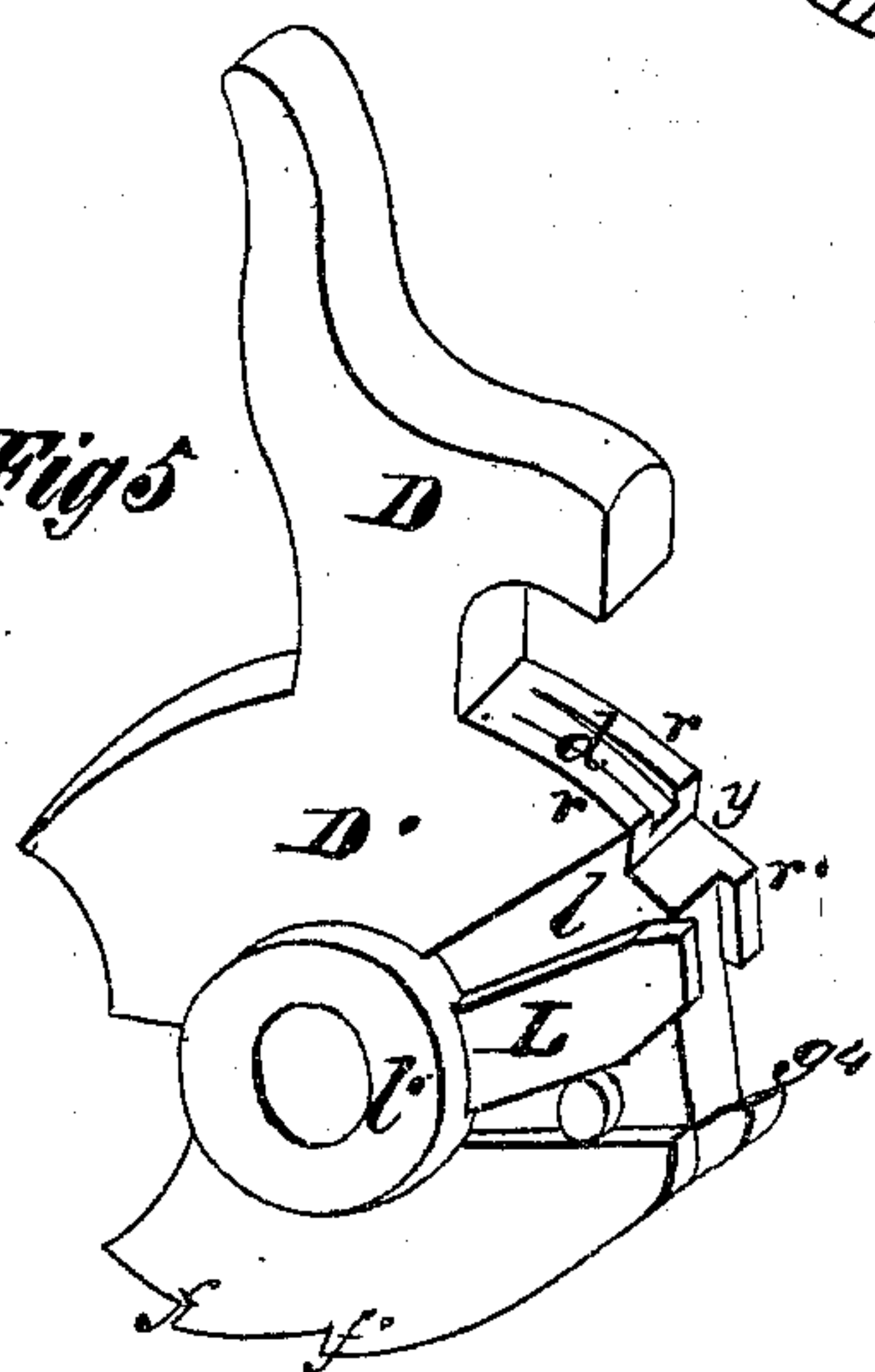


Fig. 6

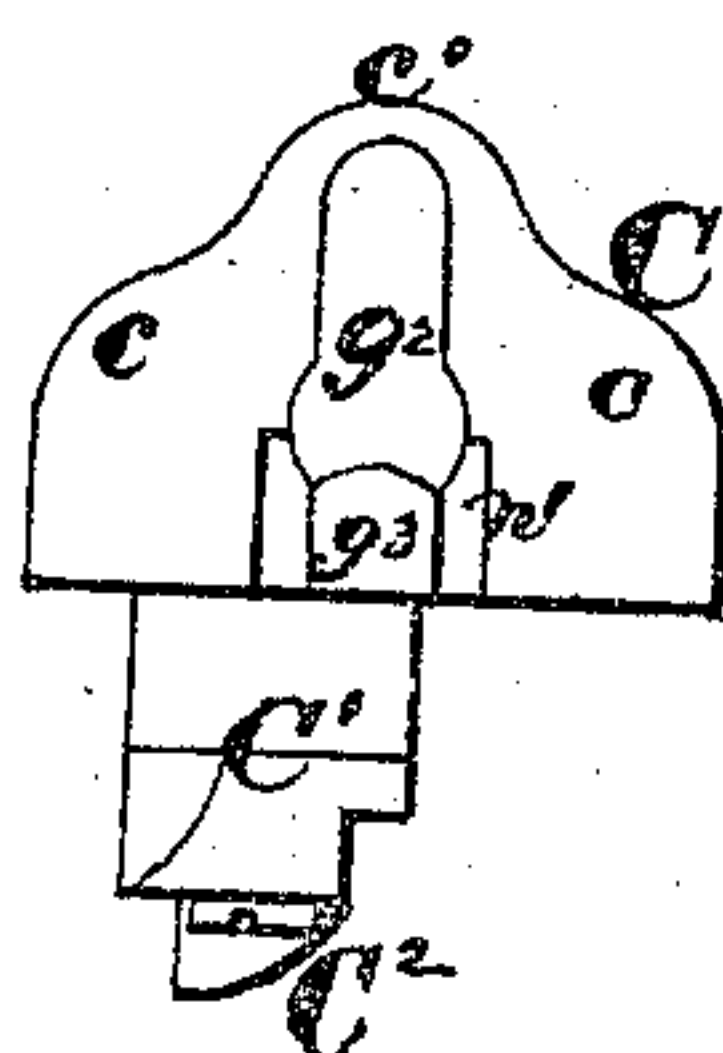
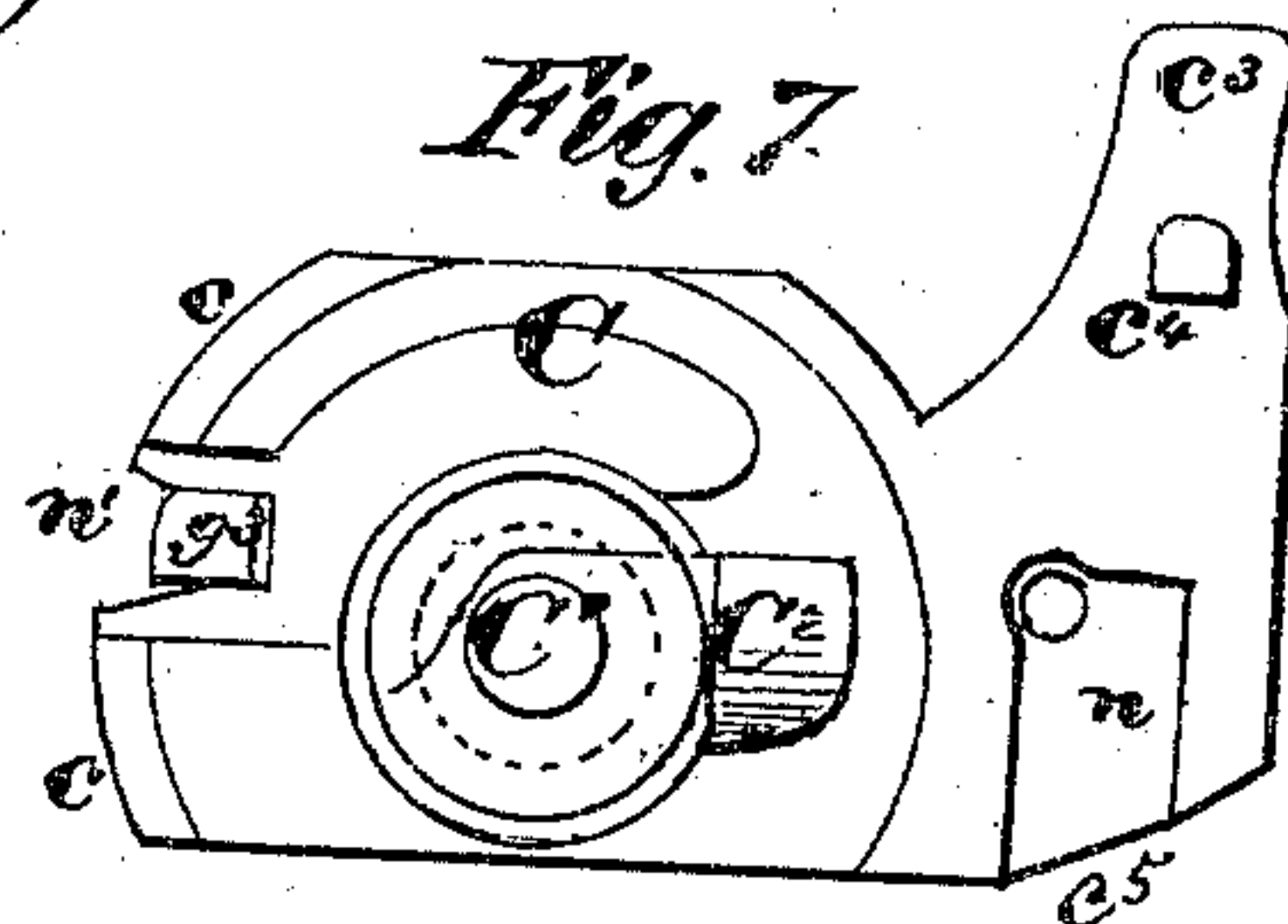


Fig. 7



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UNITED STATES PATENT OFFICE.

AUSTIN T. FREEMAN, OF HERKIMER, ASSIGNOR OF ONE-HALF HIS RIGHT
TO E. REMINGTON & SONS, OF ILION, NEW YORK.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 133,770, dated December 10, 1872.

To all whom it may concern:

Be it known that I, AUSTIN T. FREEMAN, of Herkimer, in the county of Herkimer and State of New York, have invented certain new and useful Improvements on Breech-Loading Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1, Plate 1, is a view of the right-hand side of the arm with portions of the frame and barrel broken away; Fig. 2, Plate 1, is a top view of the same, showing the breech-block in line with the barrel; Fig. 3, Plate 1, is a similar view of the same parts shown in Fig. 2, indicating the breech-block turned at right angles to the barrel; Fig. 4, Plate 2, is a vertical section taken longitudinally through the arm with the hammer down; Fig. 5, Plate 2, is a perspective view of the hammer and its breech-block lock; Fig. 6, Plate 2, is a rear-end view of the breech-block; Fig. 7, Plate 2, is a bottom view of the breech-block; and Fig. 8, Plate 2, is a perspective view of the retractor.

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

This invention relates to certain novel improvements in breech-loading fire-arms wherein a horizontally-vibrating breech-block is combined with a cartridge-shell extractor, which will extract the shells when the said breech-block is turned at or nearly at right angles to the line of the barrel, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing, A represents the frame of the piece, which is constructed with a flat horizontal surface, *b*, terminating at one end in a re-enforce, *a*, and at the other end in a recoil-shoulder, *a'*. Between the re-enforce and recoil-shoulder, and lying flatly upon the surface *b*, is a breech-block or closer, C, which is connected to the frame A by means of a vertical pivot, C', the axis of which is a little to the left-hand side of a plane intersecting the longitudinal axis of the barrel B. The rear end *c* of the breech-block is the segment of a circle concentric to the axis of the

pivot C', and when the block is in line with the barrel B its rear end *c* is snugly received by a correspondingly curved surface on the recoil-shoulder *a'*, as shown in Fig. 2. The front end of the block C presents on its left side an oblique or beveled cam-face, *c⁵*, and on its right side a laterally-extended finger-piece, *c³*, while between this piece and said cam-surface is the closing portion *c²* for the breech of the barrel, which lies beneath a holding-down boss, *b'*, on the rear end of the barrel, where the block C is in line with the barrel. Inside of this breech-block C is a firing-pin, which consists of a stem, *g*, terminated at its front end in a reduced striking portion, and at its rear end in a thick portion, *g²*, which is struck by the hammer D. This firing-pin is arranged longitudinally with respect to the block C, and allowed to receive endwise play, and it is kept in place by a screw, *g¹*, shown in Fig. 4. In rear of the recoil-shoulder *a'* is the hammer D, the segmental portion D' of which is pivoted inside of the frame A, by means of a transverse pin, *s*. The nose or exposed striking portion of this hammer strikes over the top of the recoil-shoulder against the raised or right-angular portion of the firing-pin, which portion is received into the raised portion *c¹* of the breech-block. The hammer-segment D' is notched at *j* for receiving the front end of the mainspring J. It is also notched at *f f'* for receiving the trigger S on a full and half cock. The trigger S is pivoted at *s⁴*, and acted on by a spring, *i*. The front edge of the segment D' is grooved at *d*, which leaves lips *r*, *r*, and *r'*. Opposite the lip *r'* is a movable lip or lock, L, which is formed on a hub, *l'*, and fitted into a recess, *l*, so as to vibrate about the pivot *s*. At the lower termination of the front edge of the segment D is a tooth, *g⁴*, which, in the act of full-cocking the hammer, will strike against a tooth, *g³*, on the firing-pin, and draw back this pin, as indicated by the dotted lines, Fig. 4. The rear end of the breech-block C is notched at *n'*, and cut away sufficiently to receive into it a portion of the front edge of the hammer-segment D', which will securely lock the said segment in the position represented in Figs. 1, 2, and 4. When the hammer is raised to a half-cock a notch, *y*, will be brought opposite or in line

with the notch n' , and allow the breech-block to be swung around, as indicated by Fig. 3; but when the hammer is lowered from a full to a half cock the lock L will be brought in line with the two notches $n' y$, and prevent the breech-block from being swung out of line with the barrel. The lock L is held by the friction of a spring, p , indicated in dotted lines, Fig. 4, which bears against the hub of the lock L. When the hammer is raised to a full-cock it carries with it the lock L back of the breech-block, and when the hammer is lowered to half-cock it moves the lock L in the position above shown. When the hammer is let down on the firing-pin the locking end of the device L will be carried forward and downward below the breech-block, where it will remain until the hammer is full-cocked. For the purpose of extracting the cartridge-shell q , in the act of exposing the breech of the barrel, I employ an extractor, E, shown in Figs. 4 and 8. This extractor, which is pivoted at s^2 by a transverse pivot, and which is acted on by a spring, t , consists of a segment, e^1 , and a curved lever, e^2 . On the periphery of the segment is the extracting portion e , which plays in a slot made vertically through the frame A and through the lower portion of the breech of the barrel, and which is a segment of the grooved circle, into which fits the rim around the base of the cartridge-shell. The curved portion e^2 of the extractor extends backward, and is acted on by a cam, C^2 , which is applied to a nut on the lower end of the pivot of the breech-block C, shown in Figs. 4, 6, and 7. Between the pivot C^1 and the front end of the breech-block C is a transverse groove, n , which receives the extracting portion e when it is fully drawn back and the block C is brought into line with the barrel B.

The operation of this arm is as follows: To charge the arm the hammer is drawn back to a half-cock, and the breech-plug is swung around, which latter operation moves back the extractor e . The cartridge is then partially inserted and its flange brought up against the said extracting portion e . The breech-block is then moved back to its place in line with the barrel, and in the act of doing this the cam-surface c^5 forces the cartridge and extractor home and holds them there. The hammer is then full-cocked, and if it is not desired to fire the piece at once the hammer is lowered to half-cock, which causes the device L to lock the breech-block in place and hold it thus until the piece is discharged or the hammer let down and again brought back to a half-cock. If the piece is not loaded the retractor will remain back, and when the breech-block is moved into line with the barrel the groove n will receive it, as above mentioned.

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

1. A horizontally - swinging breech - block, which has its axis within the line of the cartridge-chamber, arranged between the hammer and the cartridge-chamber—that is, directly in rear of the cartridge-chamber and forward of the hammer—substantially as described.

2. The horizontally-swinging breech-block C, carrying a firing-pin, in combination with a tooth on the hammer-segment which will act on the firing-pin and draw it back when the hammer is full-cocked, substantially as described.

3. The cam C^2 applied to the pivot C^1 of the horizontally-swinging breech-block, in combination with the arm e^2 of the extracting portion e , whereby the act of turning the breech-block C out of line from the barrel B will extract the cartridge-shell.

4. The combination of the arm e^2 , pivot s^2 , segment e^1 , and notched extractor e with the vibrating breech-block C, substantially as described.

5. The combination of hammer segment or shank D' , constructed with offsets or projections substantially as described, the oscillating locking-arm arranged on the shaft of the hammer, and controlled as set forth, and the breech-block C, constructed to operate with the locking-arm, whereby, when the hammer has been lowered to half-cock, the breech-block is locked, and when the hammer is raised to half cock, after firing it, the breech-block is allowed to swing open to permit the arm to be recharged at half-cock, and after which the breech can be locked by raising the hammer back of the half-cock, and the hammer again lowered to half-cock without unlocking the breech, substantially as described.

6. The combination of the notch n' and the notch y with one another and with the horizontally - swinging breech - block C and the hammer D D', substantially as described.

7. The recess n under the front end of the horizontally-swinging breech-block, in combination with the extractor-tooth e , whereby the said tooth is permitted to remain back and above the plane of the bed of the breech-block, in a position to be acted upon by the flange of the cartridge whenever the breech-block is closed, before a cartridge has been inserted into the chamber, substantially as set forth.

8. A horizontally-swinging breech-block, C, with its axis of vibration within the line of the cartridge-chamber and forward of the axis of the hammer, when the same is locked and unlocked by an attachment of the hammer, which attachment is actuated by the usual necessary movements imparted to the hammer, substantially as described.

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Witnesses:

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