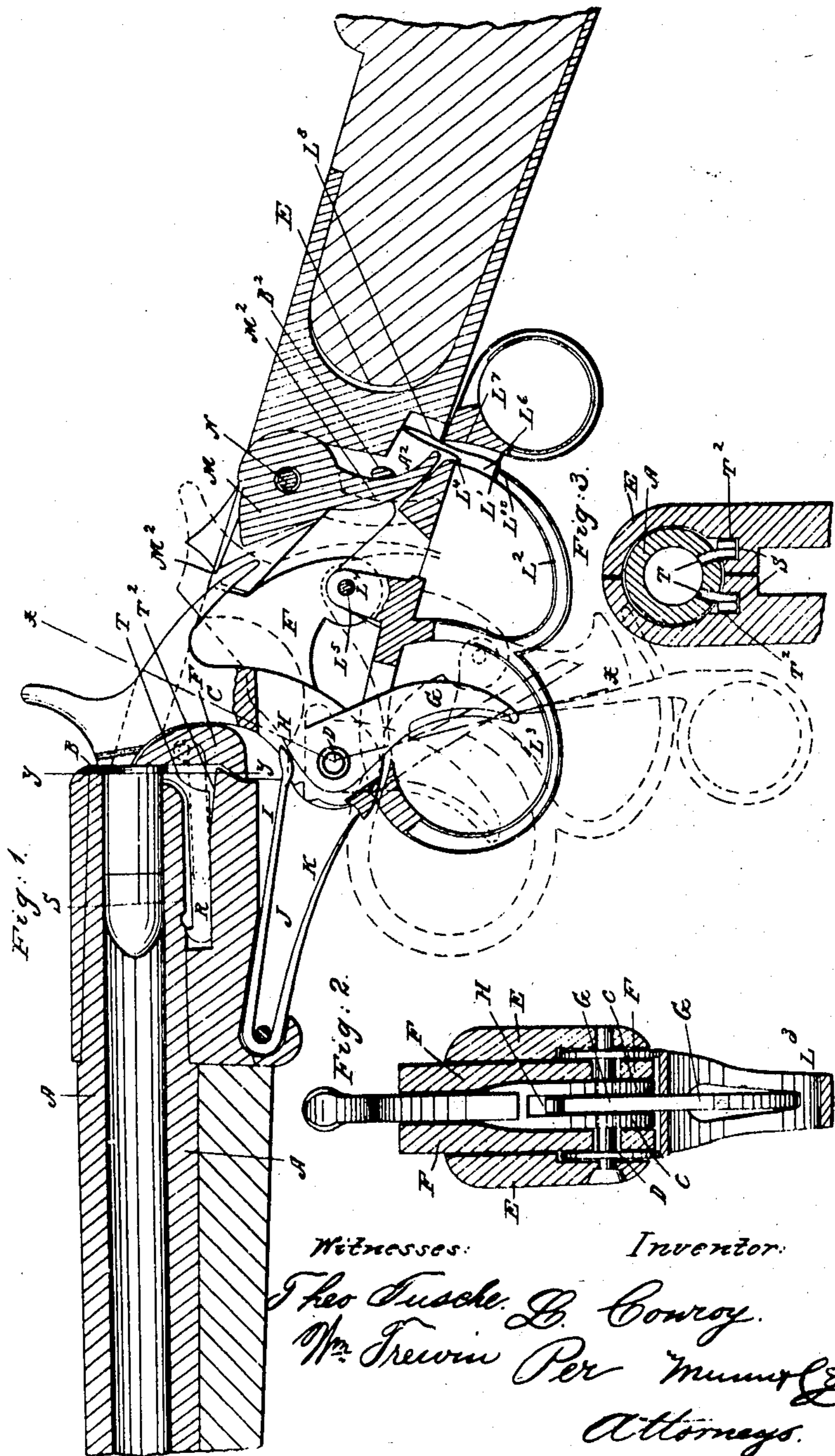


L. CONROY.

Breech Loading Fire Arm.

No. 72,803.

Patented Dec. 31, 1867.



Witnesses:

Inventor:

Geo. Tusock & L. Conroy.

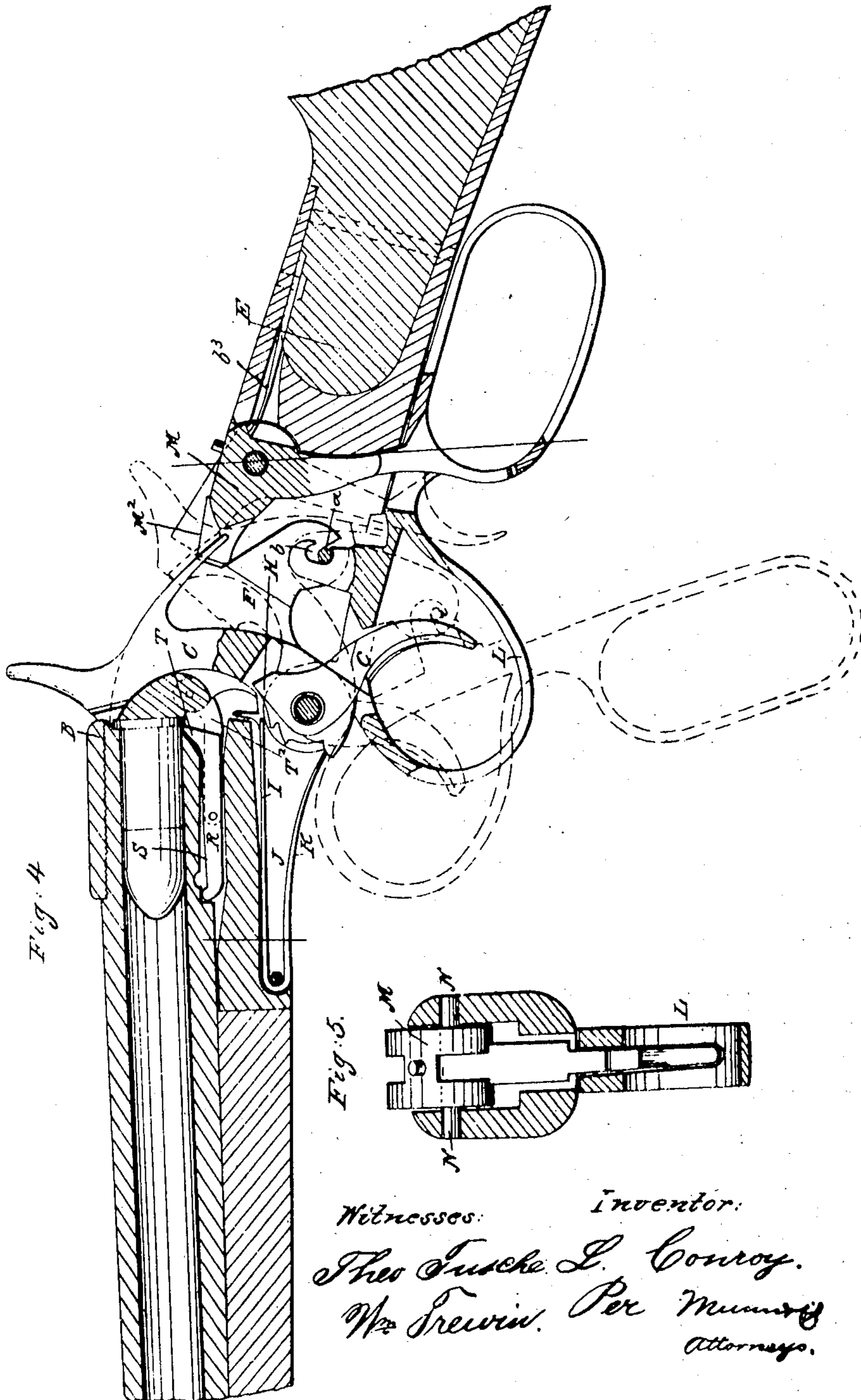
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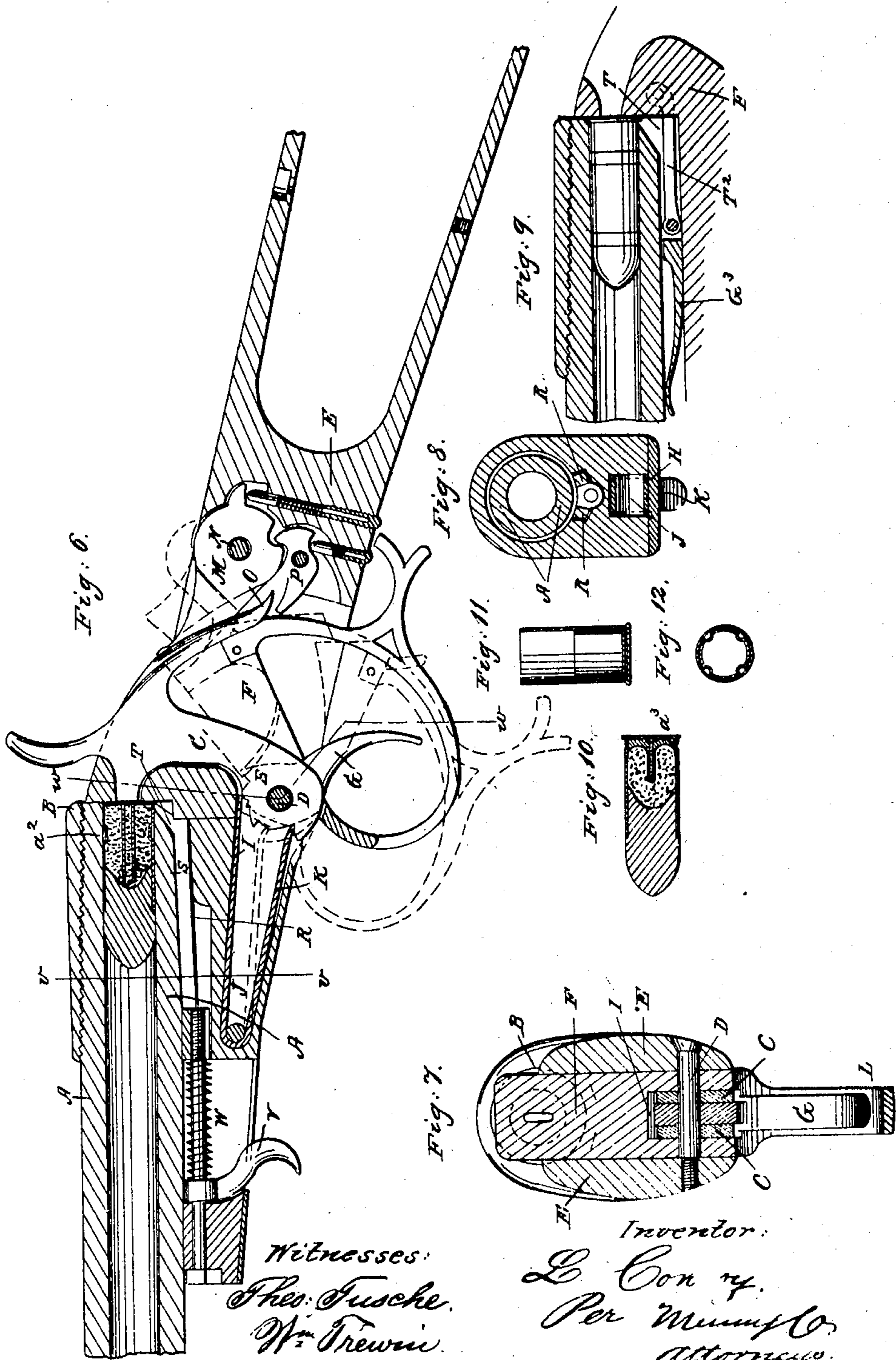
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# United States Patent Office.

LOUGHLIN CONROY, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND  
TRISTRAM DODGE VANDERVEER, OF THE SAME PLACE.

*Letters Patent No. 72,803, dated December 31, 1867.*

## 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, LOUGHLIN CONROY, of the city, county, and State of New York, have invented new and useful Improvements in Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

In the present invention, the breech-block or piece to the barrel, is hung upon a centre-pin, in common with the hammer and trigger, and is suitably cut out to allow the hammer to be drawn back, and to be thrown forward for discharging the gun.

The breech-block, when up and against the breech-end of the barrel, is there held by a block, suitably arranged therefor, and it is also so arranged in connection with, or attached, or hung to the trigger-guard, that, by swinging the said trigger-guard forward or toward the muzzle-end of the gun, the breech-block will be carried or swung away from the breech-end of the barrel for the insertion or removal of cartridges, provided the holding-block for the breech-block has been previously released therefrom, either by drawing the hammer back, or by the movement of the trigger-guard itself, according to the manner in which the several parts may have been constructed and arranged for operation in such respect.

The arrangement of the hammer within the breech-block is such that in either case it can be and is free for its usual and requisite operation, to discharge the gun, while in such breech-blocks as are arranged through the trigger-guards to set free the holding-blocks therefrom, they are carried back in conjunction with the backward movement of the breech-block, and there retained, by a suitable spring, as the breech-block is moved forward to close the breech by swinging the trigger back to its original position, where, by the action, either of the trigger-guards, or of springs connected with the holding-blocks, such blocks are thrown into position against the breech-blocks.

The trigger is so hung in common to the centre-pin, on which the hammer turns, and is also of suitable form and arrangement, as to accomplish the tripping of the hammer.

This invention also consists in a novel arrangement for extracting or removing the waste cartridge-shell from the bore of the barrel, which extractor for the cartridge is connected with the breech-block of the gun, and operates in conjunction therewith. In the accompanying plates of drawings, my improvements in fire-arms are illustrated—

In plate 1, Figure 1 is a central longitudinal section, through the barrel and its breech-portion, trigger, and other parts, for discharging the cartridge placed in the barrel.

Figure 2, a transverse vertical section in the plane of the line  $x x$ , fig. 1.

Figure 3, a transverse section in the plane of the line  $y y$ , fig. 1.

In plate 2, Figure 4 is a central longitudinal section through a gun, showing a modification in the arrangement of the several parts to the gun, and

Figure 5 a cross-section, taken in the plane of the line  $z z$ , fig. 4.

In plate 3, Figure 6 is a central longitudinal section through a gun, showing another modification in the arrangement of the parts thereof.

Figures 7 and 8, cross-sections, taken respectively in the planes of the lines  $w w$  and  $v v$ , fig. 6.

Figure 9, a detail view, showing one form of extractor for the cartridges.

Figures 10 and 11, central longitudinal sections of cartridges, adapted for a centre-fire or discharge.

Similar letters of reference indicate corresponding parts.

A, in the drawings, represents the barrel of the gun, which is shown as broken off at a short distance from its breech-end B. C, the hammer, hung upon a centre-pin or fulcrum D of the butt or stock-frame E, to the fire-arm. F, the breech-block or piece, also hung to the centre-pin D of hammer; this breech-block being suitably cut out to receive the hammer, and allow of its requisite motions for discharging the gun. G, the trigger, hung to hammer-pin D, in common with the hammer and breech-block. This trigger, at its inner end, H, is made of a cam-shape, so that when pulled back it will raise the end I of the double-armed spring J, from the notches of the hammer, thus setting such hammer free, which, by the arms K of such spring, is

thrown with great force against the cartridge in the barrel; this movement and operation of the trigger being susceptible only when the hammer has been placed at "full cock," so termed. L, the guard-rail to the trigger, which guard-rail at one end is hung to the pin of the hammer, trigger, and breech-block, and at its other, hung to the breech-block, so as to cause the same to move in conjunction therewith. M, a block for holding breech-block up and against the breech of the barrel, so as to tightly close the same, as well as to take its recoil. This hold-block, M, is hung, and turns upon a centre-pin, N, in the butt or stock-frame E, and is made of a suitable shape, at one end, M<sup>2</sup>, to fit against the breech-block, and in connection with such block is cut out to allow the hammer to be drawn back for discharging the gun. M<sup>3</sup>, a curved arm, to inner end of holding-block M, and extending therefrom through the opening A<sup>2</sup>, in the inward projecting portion B<sup>2</sup>, to trigger-guard L. This trigger-guard L is made in two parts, L<sup>2</sup> and L<sup>3</sup>, which at L<sup>4</sup> are hung in common to a pintle, L<sup>5</sup>, of the tail or inner end of the breech-block, so as to turn therein. The part L<sup>3</sup> of the trigger-guard, at its forward end, is hung, in common with the hammer, breech-block, and trigger, to the centre-spindle, and by its extension-piece, L<sup>6</sup>, projects through the opening L<sup>7</sup>, in the part L<sup>2</sup>, to the trigger-guard. The extension-piece L<sup>6</sup>, above referred to, of the trigger-guard, at its outer end, L<sup>8</sup>, is made with shoulders, L<sup>9</sup> L<sup>10</sup> L<sup>11</sup>, one for holding the part L<sup>2</sup> in position against the stock or frame, another, L<sup>10</sup>, by which the part L<sup>3</sup> to the trigger is swung out in common with the part L<sup>2</sup>, when such part is properly moved therefor, and another, L<sup>11</sup>, by which the part L<sup>3</sup> is carried back with the part L<sup>2</sup>, when swung back therefor.

To operate the parts above described, pull upon the part L<sup>2</sup> to the trigger-guard, in a direction to swing toward the muzzle or forward end of the gun, by which movement the hold-block M is tripped or turned, and thereby brought into the position represented in red, which is so as to be free from the holding-block, when, continuing to swing the trigger-guard forward, the breech-block is thereby swung back from the barrel, carrying the hammer with it, and thus, if such movement is continued to the proper extent, the breech-block, hammer, trigger, and trigger-guard will be brought into the relative positions shown by red lines in the drawings, in which position a cartridge can be inserted or removed, as may be desired, when, swinging the trigger back to its original position, the breech-block, trigger, and hold-block, are carried back to their original positions relatively, leaving, however, the hammer at full cock, as shown, and thus in position for the immediate discharge of the fire-arm, if so desired.

Thus, from the above description, it is plain to be seen that the opening and closing of the breech, and the cocking of the hammer, are done by two movements of the trigger-guard, or, in other words, by simply swinging the trigger-guard forward and backward, and in a most positive and direct manner.

In addition to the opening of the breech-block and the cocking of the hammer by the forward swing of the trigger-guard, I have connected with breech-block an arrangement of parts for extracting the waste cartridge-case in the barrel, as the breech-block moves away from the barrel, which arrangement and connection will be now described.

This cartridge-extractor consists of two arms, R and T<sup>2</sup>, arranged to move in ways S<sup>1</sup>, made in the stock or frame, under the barrel, so that the ends T of the part R will take the cartridge at its flanged end and throw or carry it out of the barrel.

The arms R are each hung or pivoted centrally, or nearly so, to the forward ends of the arms T<sup>2</sup>, that at their other ends are pivoted to the upper forward portion of the breech-block, so as to move in conjunction therewith, and thus carry the retractor-arms out or in, as desired. Upon the forward end of the arms R a projection or cam is formed, corresponding to a suitable notch cut in the under side of the barrel. By the action of closing the breech-block, the parts T of the arms R fall as they approach the flange of the cartridge, and remain in this position until they have passed under it, when they are instantly raised up in front of said flange in a proper position for withdrawing the cartridge-shell. By these devices a free and positive motion is imparted to the retractor, backward and forward.

In plate 2, some modifications of the construction of parts to the gun above described and represented in plate 1, are shown. These modifications are as follows:

First, in making the trigger-guard in one piece, in lieu of two pieces, as described in the first instance, with it hung by a notch, b, to a pin, a, at the rear or tail-end of the breech-block, so as to have a sufficient play thereon to allow the holding-block to be released from the breech-block before the guard commences to act upon the breech-block to swing it backward.

Second, in extending the holding-block down into the trigger-guard, and so slotting the latter and also forming it, as well as the extension-piece, to the breech-block, that as the trigger-guard is swung forward the holding-block will be first tripped or released from the breech-block of the gun, when, continuing the movement, the breech-block is carried back, as above stated; and

Third, in using a spring, b<sup>3</sup>, in connection with the holding-block, to increase its action against the breech-block, and to the more perfectly and securely hold it in place.

In plate 3, the modifications there shown are as follows:

First, in attaching the trigger-guard above and directly to the tail-end of the breech-block, with its forward end hinged to the under side of the barrel-stock, whereby the forward and backward movement of the trigger-guard swings the breech-block away from and up to the breech of the gun, as the case may be.

Second, in the combination, with the hold-block, of a pawl, P, that, by one end, is in position to engage with the hold-block, and by the other, for the arm O to the hammer to strike against it, as it is swung back, and thus to so swing or turn it as to throw the hold-block out of position against the breech-block, and thus to set it free, so as to allow it to be swung back by pulling upon the trigger-guard. To both the hold-block and pawl P, springs are applied, as shown, for returning them to their original positions, after the hammer-arm has ceased to act upon the pawl P. The principal difference between the arrangement of the parts shown in

plate 3 and those in plates 1 and 2, consists in the fact that in the latter the trigger-guard operates the hold-block, while in the former the hold-block is operated by the arm to the hammer.

Third, in connecting the extractor-arms R, in lieu of to the breech-block, to a common stem or rod U, provided with a thumb-piece, V, suitable for operating or sliding the arms. W, a spiral or curled spring, about stem U, to throw it back to its place after having been moved through its thumb-piece.

In the drawings, plate 3, improvements in cartridges are shown, one, fig. 6, consisting in the use of a packing-ring,  $a^2$ , upon the outside of the cartridge-case to insure a more perfect fitting of the cartridge-case within the barrel, and thus to prevent, in a great measure, any leakage of the explosive gases about the case.

Another improvement, fig. 6, consists in the use of a central tube,  $b^2$ , for the fulminate, which tube extends through the depth of powder in the cartridge, and thus insures its ignition at the front end of the cartridge, in lieu of at the rear, as heretofore, the advantages of which are obvious.

A modification of the centre fulminate passage is shown in fig. 10, wherein the centre tube forms a part of a head-plate,  $a^3$ , that is secured within the cartridge-case against its flanged head.

In figs. 11, 12, and 13, are represented still another improvement in cartridge-cases, but in this case for rim-fire or discharge.

This improvement consists in the use within the cartridge-case of another casing or tube, of a length sufficient to reach to the forward end of the powder, between which tube and the case a passage or passages are left for the fulminate to communicate with the powder, either by corrugating the same in the direction of its length or otherwise, or by making the inner tube sufficiently smaller in diameter therefor, or in any other suitable manner.

I claim as new, and desire to secure by Letters Patent—

1. The combination of the breech-block, hammer, trigger, and trigger-guard, hung upon a common centre-pin, when the trigger-guard is so constructed, in connection with the holding or recoil-block, as to operate thereon, and on the breech-block, substantially as and for the purpose described.

2. The combination of the hammer with the trigger, when hung upon a common centre-pin, and arranged to operate in connection with a spring, or its equivalent, substantially as described.

3. The cartridge-retractor, formed of two parts, R and T<sup>2</sup>, the latter pivoted at its forward end to the centre, or nearly so, of the part R, and its rear end pivoted to the upper and forward portion of the breech-block, the part R provided with a cam upon its forward end, corresponding to a suitable notch cut in the under side of the barrel, all constructed and operating as herein shown and described.

4. The arrangement of the recoil-block M, with its curved arm, in combination with the spring  $b^3$ , by means of which the breech-block is supported, and the guard-lever kept in position when the breech is closed, as herein shown and described.

5. The hook  $b$ , attached to the lever-guard, in connection with the pin  $a$ , by means of which a drop-motion is obtained at that point, so that when the lever-guard is pulled downwards to open the breech, it comes in contact with the curved arm of the recoil-block M, and by the time the hook  $b$  catches upon the pin  $a$ , the recoil-block is raised sufficiently to permit the breech-block to pass under it, the breech being opened by continuing the pull on the lever-guard, as herein shown and described.

The above specification of my invention signed by me, this 26th day of February, 1867.

LOUGHLIN CONROY.

Witnesses:

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