

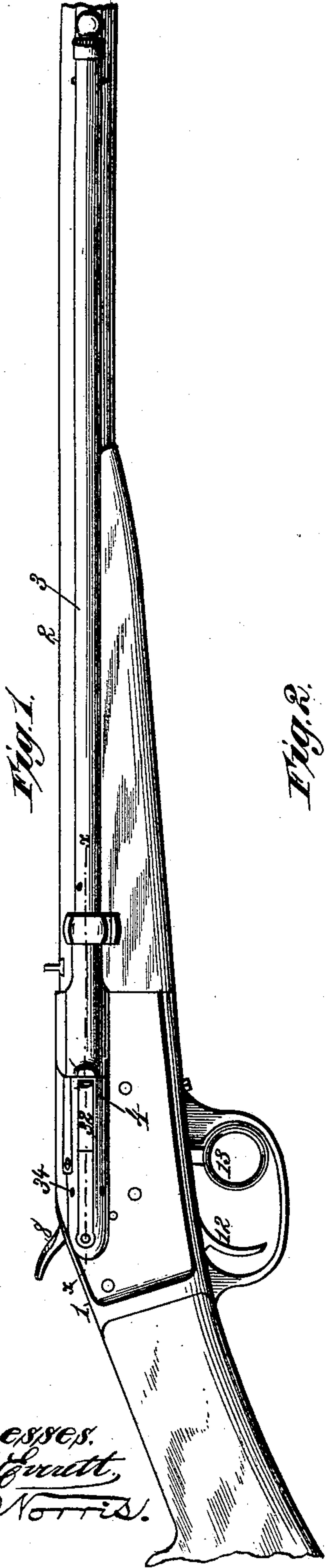
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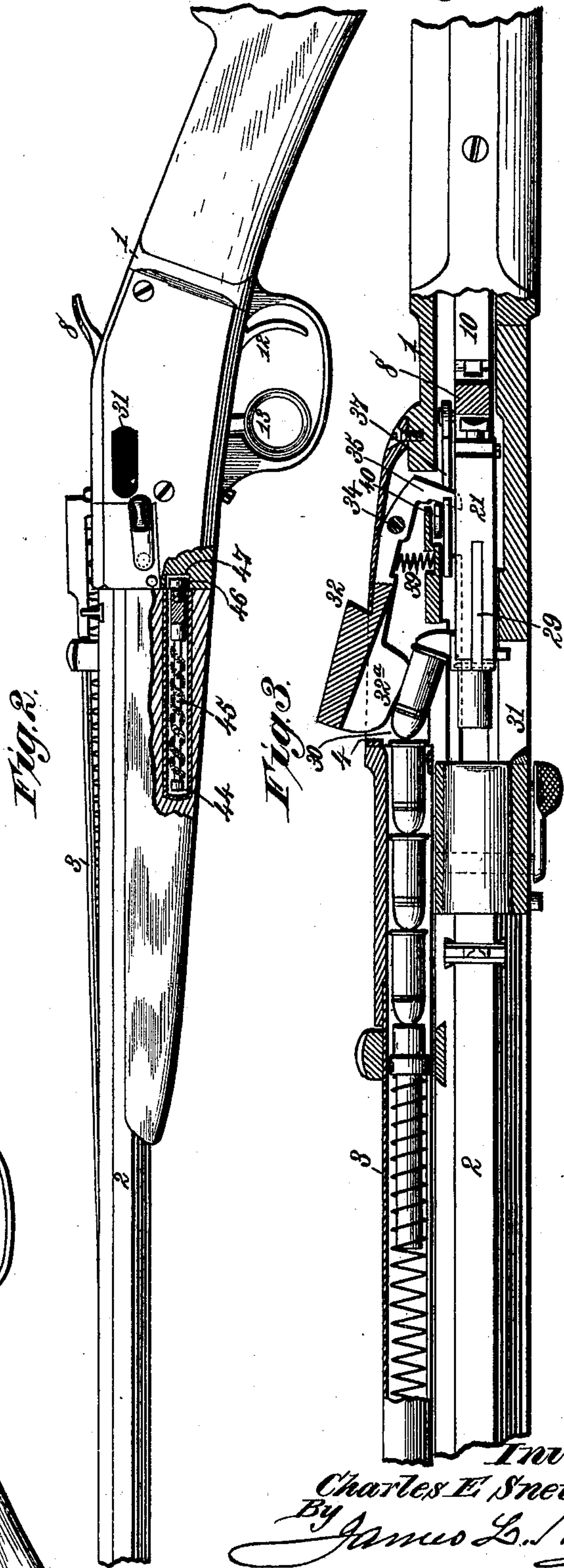
C. E. SNEIDER.
BREECH LOADING GUN.


No. 435,329.

Patented Aug. 26, 1890.



Witnesses.
Robert Errett.
A. H. Norris.



 *Inventor*
Charles E. Snieder.
By James L. Norris
Atty.

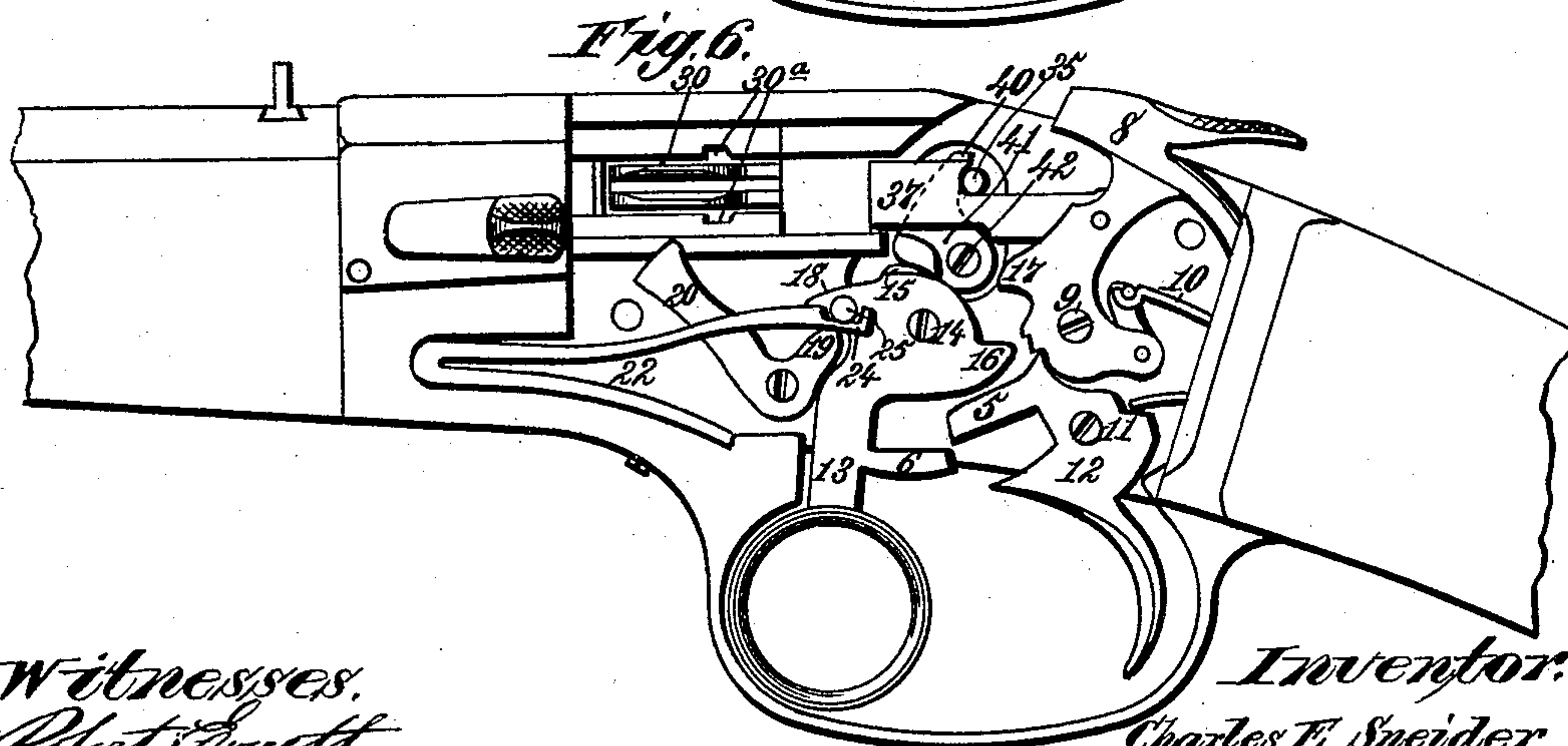
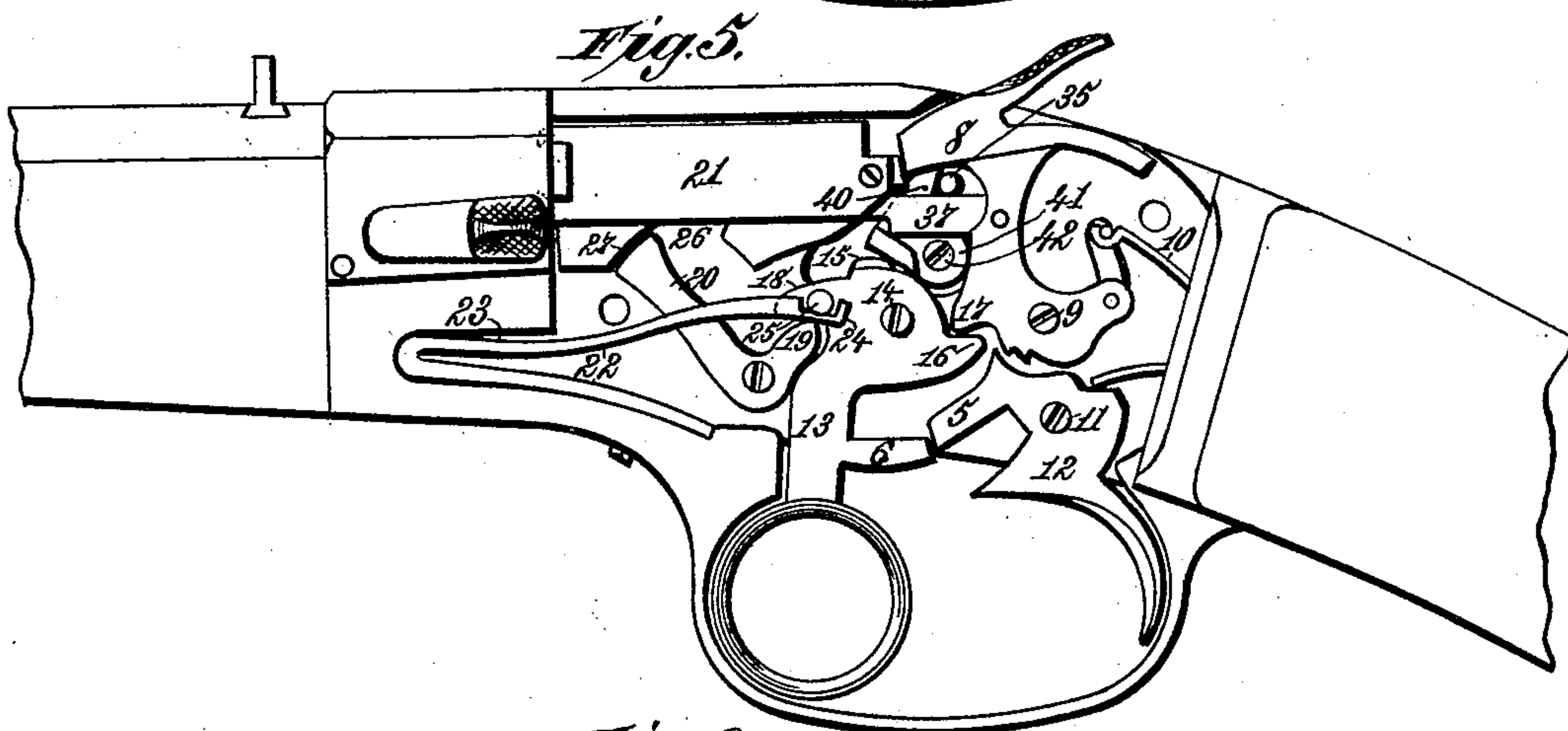
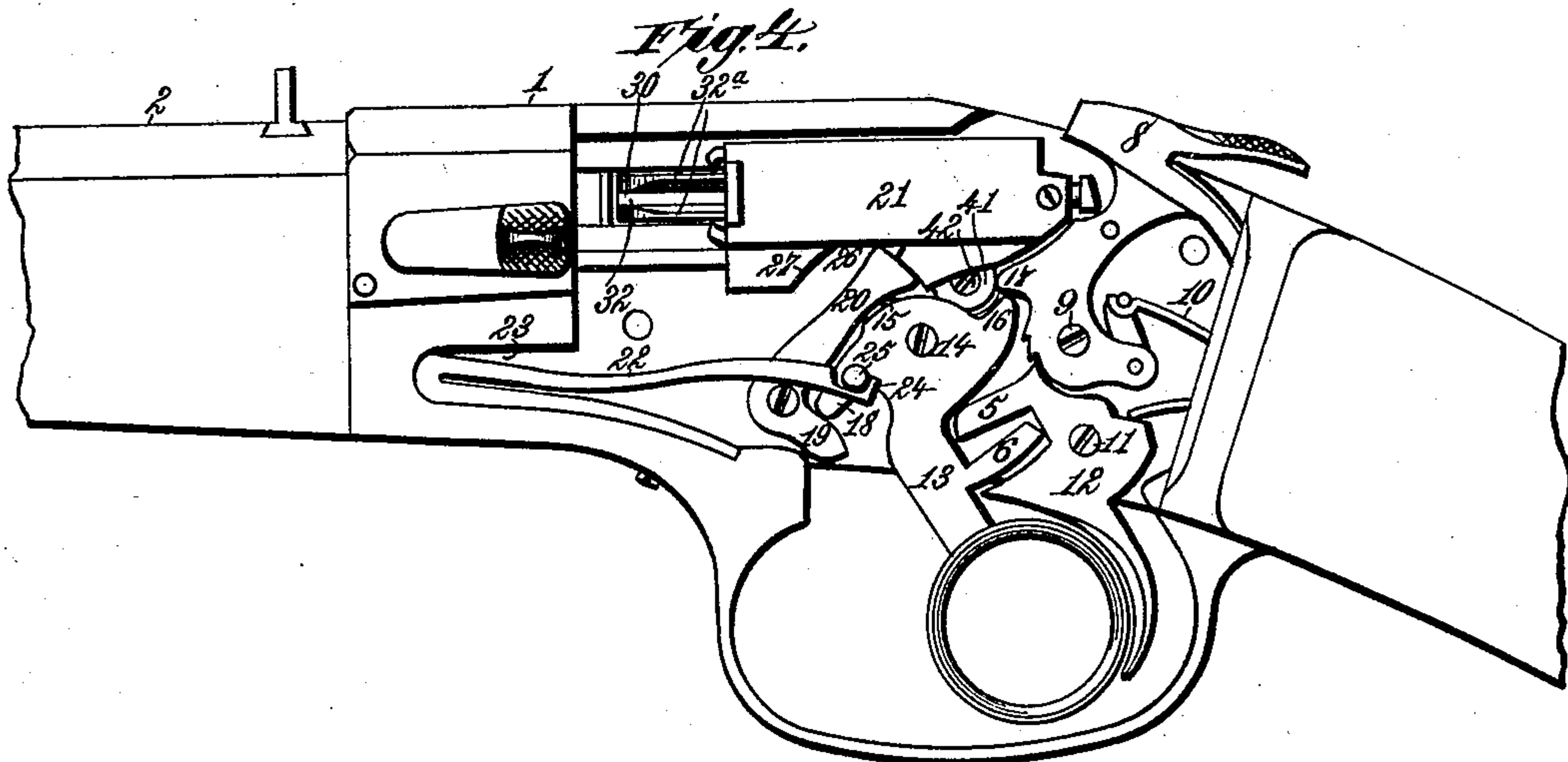
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Fig. 7.

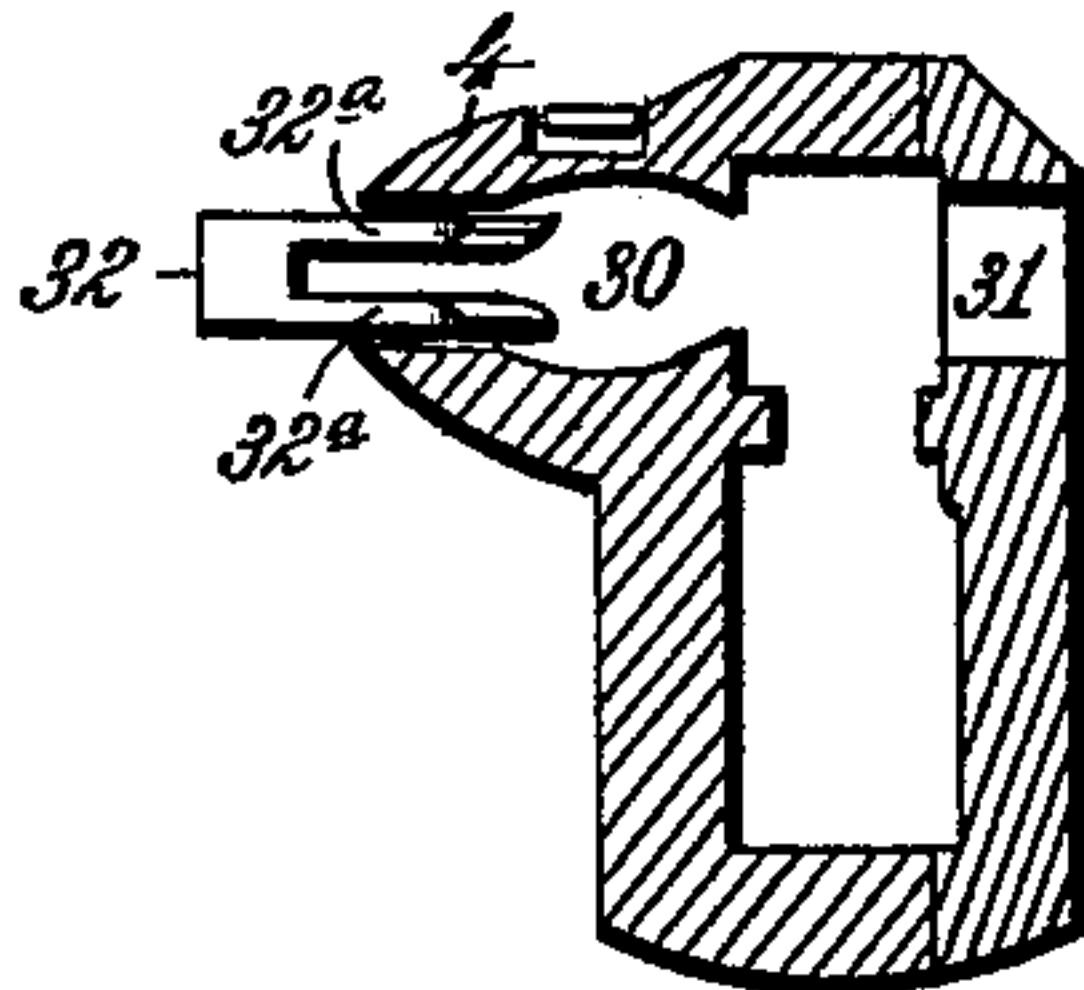
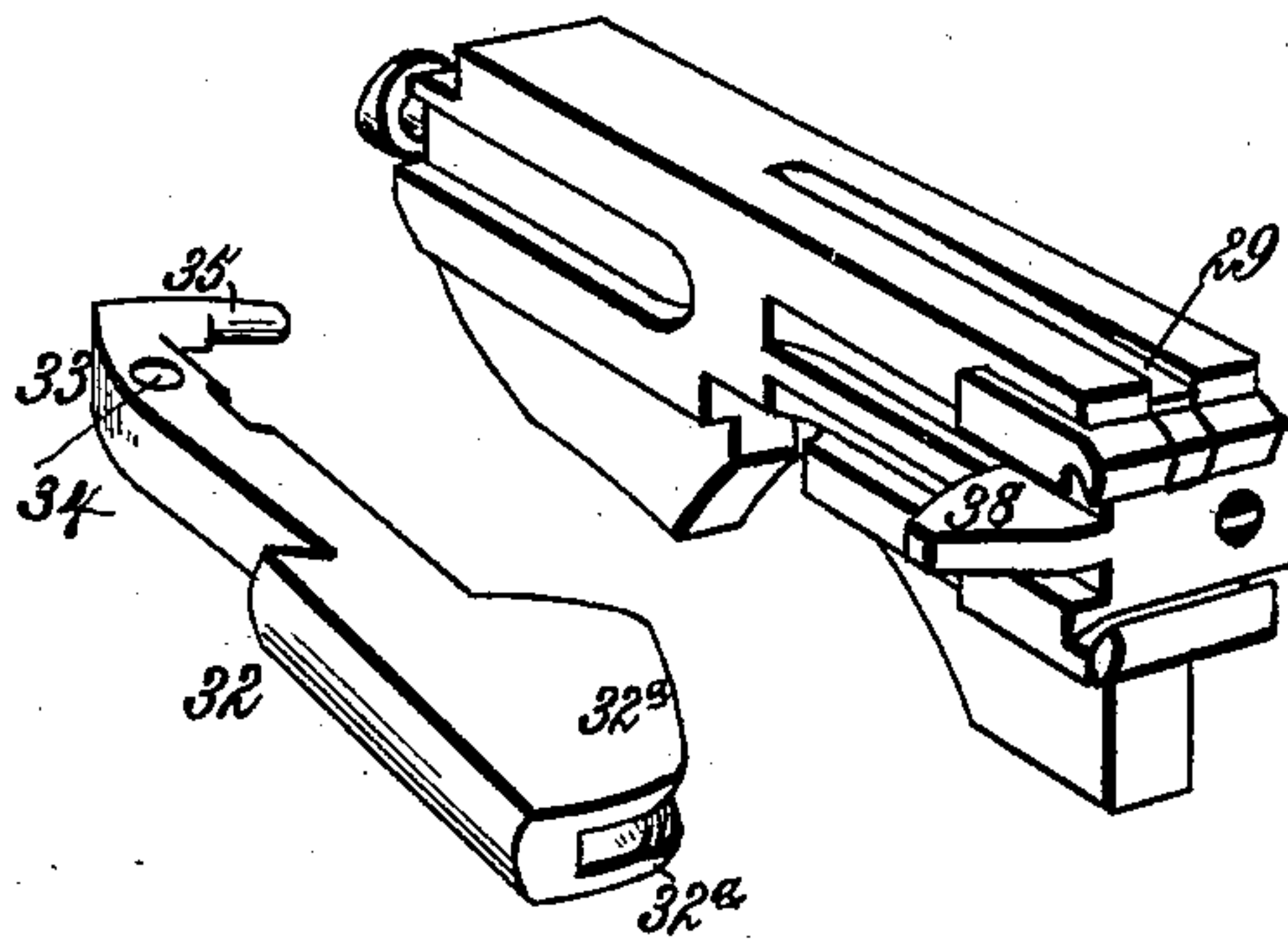


Fig. 8.



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UNITED STATES PATENT OFFICE.

CHARLES E. SNEIDER, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE
SNEIDER ARMS COMPANY OF BALTIMORE CITY, OF SAME PLACE.

BREECH-LOADING GUN.

SPECIFICATION forming part of Letters Patent No. 435,329, dated August 26, 1890.

Application filed May 12, 1890. Serial No. 351,500. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDWARD SNEIDER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented new and useful Improvements in Breech-Loading Magazine Fire-Arms, of which the following is a specification.

This invention relates to the breech-loading magazine fire-arm constituting the subject-matter of Letters Patent No. 417,594, issued to me December 17, 1889.

The objects of the present invention are to improve the efficiency of the breech mechanism; to render the fire-arm accurate and reliable under all circumstances; to insure correct loading when rapid firing is desired; to better adapt the fire-arm for use by the military or army; to provide means whereby the recoil of the breech-block at the instant of firing is rendered impossible by the action of the hammer-releasing trigger on the cocking-lever; to provide a novel cartridge inserter-ejector for accurately guiding and laterally moving the cartridge into alignment with the breech-block; to construct the cartridge inserter-ejector and the breech-block in such manner that the latter operates to dog the cartridges in the magazine when the hammer has been cocked and the gun is prepared for firing, and finally to so construct the breech-block that the cartridge from the magazine bears against and follows a projecting part of the breech-block as the latter moves rearward to load the fire-arm, while such projecting part bridges the rear end of the magazine when the breech-block is in its normal or forward position.

To accomplish all these objects my invention involves the features of construction, the arrangement or combination of devices, and the principles of operation hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a right-hand side elevation of a breech-loading magazine fire-arm embodying the improvements. Fig. 2 is a left-hand side elevation of the same. Fig. 3 is a horizontal sectional view taken on the line $x x$, Fig. 1, on a larger scale. Fig. 4 is a side elevation of the breech with the side wall or face-plate omitted, and showing the hammer cocked and

the hammer-cocking lever held back as it would appear prior to being released for its automatic return movement. Fig. 5 is a similar view showing the hammer-releasing trigger held back as when the gun is fired. Fig. 6 is a similar view, the breech-block being omitted, the hammer cocked, and the hammer-cocking lever in its normal position. Fig. 7 is a detail transverse sectional view of the breech-frame, showing the bifurcated cartridge inserter-ejector. Fig. 8 is a detail perspective view showing the breech-block and the cartridge inserter-ejector.

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, wherein—

The numeral 1 indicates the metallic breech-frame of the fire-arm; 2, the barrel, and 3 the tubular cartridge-magazine extending longitudinally along the barrel parallel thereto, and having its rear open end abutting against a lateral hollow enlargement 4 of the breech-frame.

The barrel is detachably secured to the breech-frame by a locking device, so that the barrel, carrying with it the magazine, can be quickly and conveniently removed and replaced. The magazine is pivoted at or near its front end to the barrel, and is furnished with a longitudinal slot for inspecting its interior, and with an internal spring acting on a plunger or follower to feed the cartridges rearward, as in Letters Patent No. 422,846, issued to me March 4, 1890.

The hammer 8 is shown exposed, but obviously can be concealed by omitting its thumb-piece, and it is mounted on a stud-bearing or journal 9, and is acted on by one arm of the spring 10, which acts by its other arm on the hammer-releasing trigger 12, which is mounted on a stud-bearing or journal 11.

The lever 13 for operating the breech-block and cocking the hammer is mounted on a stud-bearing or journal 14, and is provided at its upper edge with a cam-lug 15, a rearward toe 16, acting on a projection 17 of the hammer, and a forward hook 18, loosely engaging the arm 19 of the lever 20, that serves to reciprocate the breech-block 21 and to lock it against recoil when the gun is fired.

The duplex mainspring 22 in this improvement is detachably seated in a cavity 23 in the breech-frame, and one arm rests against the bottom wall thereof, while the other and longer arm is provided at its extremity with a hook 24, which is in detachable hooked engagement with a lateral pin 25, formed with or attached to the cocking-lever on its forward hook 18 or other point in advance of the stud-bearing or journal 14. By a direct connection of the spring with the cocking-lever, as described, the mechanism is more prompt in action, while it is more simple, durable, and economical than the construction exhibited in my Letters Patent No. 417,594.

The upper end of the locking-lever enters a notch 26 in the under side of the breech-block to reciprocate the same, the front wall of the notch being inclined, as at 27, and acting as a shoulder to abut the lever when the breech-block is in position for firing, thereby preventing it from recoiling. The locking-lever is held or locked against any rearward movement, independent of movement of the hammer-cocking lever, by reason of the arm 19 resting against the front or breast of the said trigger, as shown in Fig. 4. The locking-lever is sufficient to prevent recoil of the breech-block in a small-caliber or a sporting fire-arm; but to avoid the possibility of recoil in a large-caliber or military gun I provide means whereby the hammer-releasing lever acts to lock the cocking-trigger immovable at the instant of firing. To effect this in the most simple manner I form or otherwise provide the forward part of the hammer-releasing trigger 12 with a projecting finger 5, to abut a tongue-piece 6 or other rear part of the cocking-lever, as in Fig. 5, when the hammer-releasing trigger is retracted to fire the charge. The tongue-piece 6 on the cocking-lever is adapted to pass by the finger 5 on the hammer-releasing trigger when the cocking-lever is retracted, as in Fig. 4. When the fire-arm is loaded and the hammer is cocked preparatory to firing, the finger and the tongue-piece stand in the proximate position in Fig. 6 in such manner that the retraction of the hammer-releasing trigger promptly throws the finger 5 downward against the rear extremity of the tongue-piece, thereby rendering it impossible for the cocking-lever to move rearward. Inasmuch as the breech-block cannot recoil independent of any movement of the cocking-lever, it will be obvious that recoil of the breech-block at the instant of firing is impossible. This construction and mode of operation are particularly designed for large-caliber or military or army guns, but is useful in sporting-rifles.

The breech-block 21 moves lengthwise in rectilinear guideways on the breech-frame in a line parallel with the axis of the gun-barrel, and a spring firing-pin is carried by and moves on the breech-block, its position being such that it will be driven forward by the hammer when the latter is released by the

hammer-releasing trigger, thereby firing the cartridge. The breech-block at its forward end is provided with an upper and a lower hooked catch for engaging opposite side portions of the flanged base of a cartridge-shell. These catches extend longitudinally from the breech-block, and the construction and arrangement are such that a cartridge moved sidewise into the breech-frame when the breech-block is retracted will interlock by its flanged base with the hooked catches, whereby the reciprocating movement of the breech-block will reciprocate the cartridge-shell to push the cartridge into the gun-barrel and after firing to extract the empty shell from the barrel and move it back into position to be ejected sidewise when a fresh cartridge is inserted and engaged with the breech-block. The uppermost hooked catch of the breech-block is centrally recessed to receive the hooked end of a spring-plate 29, as best shown in Fig. 8, which spring exerts a slight pressure on the rim of the cartridge and operates as a friction device to stop and hold the cartridge in proper alignment with the bore of the rifle-barrel. This center-spring on the breech-block is desirable, as it contributes to the accuracy of the fire-arm as regards loading, for it operates to stop the lateral movement of the cartridge at the proper point.

The side wall of the breech-frame at the inner portion of the lateral hollow enlargement 4 is provided with a transverse cartridge-receiving orifice 30, and the opposite side wall is provided with a transverse shell discharging or ejecting orifice 31. These orifices are in line, one directly opposite the other, so that a fresh cartridge inserted laterally through the receiving-orifice 30 by an inserter-ejector, hereinafter described, will disengage the empty shell held by the hooked catches of the breech-block and eject such shell sidewise through the discharging or ejecting orifice.

The cartridge inserter-ejector 32 acts to insert a cartridge into the breech-frame and to eject the empty shell, and, as shown, it is composed of a bifurcated head on a bell-crank or elbow-lever 33, pivoted at 34, and having its other arm 35 extending through a slot in the breech-frame into the path of the hooked or shouldered end of a slide-arm 37, which is pivotally connected with the hammer 8 in such manner that when the latter is cocked the slide-arm is carried backward, its hook or shoulder acts on the arm 35, and the inserter-ejector 32 is thrown inward, so that a cartridge pressed from the magazine into the hollow enlargement 4, in coincidence with the receiving-orifice 30, is inserted into the breech-frame and engaged with the hooked catches of the breech-block. If a cartridge has been previously fired, the inserted cartridge, under the influence of the inserter-ejector, will eject the empty shell through the discharging or ejecting orifice 31. The normal position of the inserter-ejector is such that its front in-

ner edge projects into the line of the cartridges in the magazine. The bell-crank is acted on by a spiral or other spring 39, between its pivot 34 and the inserter-ejector, which spring tends to throw the latter outward, but is prevented from so doing until a certain time by the arm 35 abutting a lug 40 on an oscillatory plate 41 eccentrically pivoted to the breech-frame at 42. While the cocking-lever is at rest its cam-lug 15 presses on the lower edge of the oscillatory plate 41 in front of the pivot 42 and moves the lug 40 rearward; thus causing the arm 35 to be held slightly back and the inserter-ejector to be held in its innermost position against the tension of the spring 39 of the bell-crank 33. To relieve the inserter-ejector from such action of the lug 40 by the initial rearward movement of the cocking-lever 13, the cam-lug 15 is moved away from contact with the plate 41 the instant the cocking-lever commences such rearward movement, thereby freeing the arm 35 from the restraint of the plate 41 and permitting the spring 39 to throw the inserter-ejector outward from the line of the rear cartridge in the magazine, so that said cartridge is then pressed back into the hollow enlargement 4 in coincidence with the receiving-orifice 30 in the side wall of the breech-frame. The cocking-lever, continuing its rearward movement, causes the locking-lever 20 to swing back and retract the breech-block, simultaneously with which the hammer is cocked and its slide-arm 37 drawn back, so that its hook or shoulder 43 strikes the arm 35 of the bell-crank 33 and throws the inserter-ejector 32 suddenly inward, thereby inserting a fresh cartridge into engagement with the hooked catches of the breech-block and ejecting the empty shell of a previously-fired cartridge through the discharging or ejecting orifice 31. The cocking-lever being released from the pressure of the finger, the spring 22, acting directly on the cocking-lever, throws the latter to its normal position and restores the locking-arm 20 and the breech-block 28 to the normal position, as in Fig. 5. At the same time the cam-lug 15, acting on the plate 41, moves the lug 40 rearward into correct position to again hold the bifurcated head of the inserter-ejector in its innermost position; but this cannot occur until the hammer is lowered, for when the hammer is cocked the slide-arm 37 so holds the bell-crank 33 that the inserter-ejector is retained at the limit of its inward movement, in which position it fills or nearly fills the cartridge-receiving orifice 30. The inserter-ejector is bifurcated to form the two distinct branches 32^a, separated by a channel, such branches serving to rest against the cartridge at points above and below its median line. This construction affords an accurate seat to guide the cartridge rearward, and the division of the inserter-ejector into two branches reduces friction and materially contributes to the accuracy and efficiency of the loading mechanism. The forward

ward end of the breech-block is formed or otherwise provided at one side with a lateral flattened arm or stud 38, as in Figs. 3 and 8, which bridges the rear end of the magazine and dogs the cartridges therein when the breech-block is in its normal position. When the breech-block is retracted, the rear cartridge follows the arm or stud 38, and such cartridge is thereby supported and properly guided backward. The orifice or opening 30, by which the cartridge moves laterally into the breech-frame, is of less width than the diameter of the cartridge-rim, and hence the cartridge-rim cannot pass into the breech-frame until it coincides with notches 30^a, formed in the edges of the orifice or opening 30. The arm or stud 38 is beveled rearwardly to afford a square abutment for the base of the cartridge, when the latter moves back in an oblique direction, as will be understood from Fig. 3. This oblique line of motion arises from the oblique position of the bifurcated inserter-ejector when the breech-block is being retracted, and hence the cartridge-rim is placed in position to promptly enter the notches 30^a when the inserter-ejector moves inward to insert the cartridge into the breech-frame. The several parts are so relatively arranged and the congruity of action is such that rapid loading and firing can be effected in the most accurate manner and the reliability and efficiency of the fire-arm are materially increased.

As shown in Fig. 2, the fore-arm or section of the gunstock, which is carried by the detachable barrel, is provided, by boring or drilling, with a longitudinal orifice 44 to contain a gun-swab or cleaning-instrument 45 for cleaning the barrel when occasion demands. The swab or cleaning-instrument is provided with a projecting knob or handle 46, adapted to enter a socket 47 in the end of the breech-frame. The swab or cleaner is thus concealed and guarded from accidental displacement or loss, while on detaching the barrel the swab or cleaner is in the most convenient position to be readily removed and used for cleaning purposes. The knob or handle 46 is detachably engaged with a screw-socket in the end of the swab or cleaner, and therefore by removing the knob or handle a rod or wire can be attached to the swab or cleaner for passing the latter through the barrel.

Having thus described my invention, what I claim is—

1. The combination, with a hammer, a breech-block, and a lever connected with and operating to retract the breech-block, of a hammer-releasing trigger which abuts and locks the lever at the time of firing to prevent recoil of the breech-block, substantially as described.

2. The combination, with a hammer, a breech-block, and a cocking-lever connected with and operating to retract the breech-block and cock the hammer, of a hammer-releasing trigger having a finger which abuts

and locks the cocking-lever at the time of firing to prevent recoil of the breech-block, substantially as described.

3. The combination, with a breech-frame, 5 a hammer, a breech-block, and a cocking-lever connected with and operating the breech-block, of a spring supported by the breech-frame and directly engaged with the cocking-lever for restoring the cocking-lever and 10 breech-block to their normal position, substantially as described.

4. The combination, with a breech-frame, a hammer, a breech-block, and a cocking-lever, of a duplex-armed spring seated in the 15 breech-frame and having one arm bearing against the latter and the other arm engaged directly with the cocking-lever in advance of its pivot, substantially as described.

5. In a breech-loading fire-arm, the combination of a breech-frame, a breech-block, a 20 bifurcated cartridge inserter-ejector, upon the two branches of which the cartridge is guided, a hammer, and a cocking-lever which operates the breech-block and the inserter-ejector and 25 cocks the hammer, substantially as described.

6. In a breech-loading magazine fire-arm,

the combination, with a magazine, of a breech-block having a lateral arm or stud which dogs the cartridges in the magazine, a lever 30 for operating the breech-block, and means for inserting the cartridge into the breech-frame, substantially as described.

7. In a breech-loading magazine fire-arm, the combination of a magazine, a breech-block having a lateral arm or stud which dogs the 35 cartridges in the magazine, a bifurcated cartridge inserter-ejector, a hammer, and a cocking-lever which operates the breech-block and cocks the hammer, substantially as described.

8. A breech-loading fire-arm having a detachable barrel carrying a part of the gun- 40 stock, which is provided at the end abutting the breech-frame with an internal orifice containing a gun-swab or cleaner having a knob or handle entering a socket in the breech- 45 frame, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES E. SNEIDER.

Witnesses:

WILLIAM H. BERRY,
MURRAY HANSON.