

(No Model.)

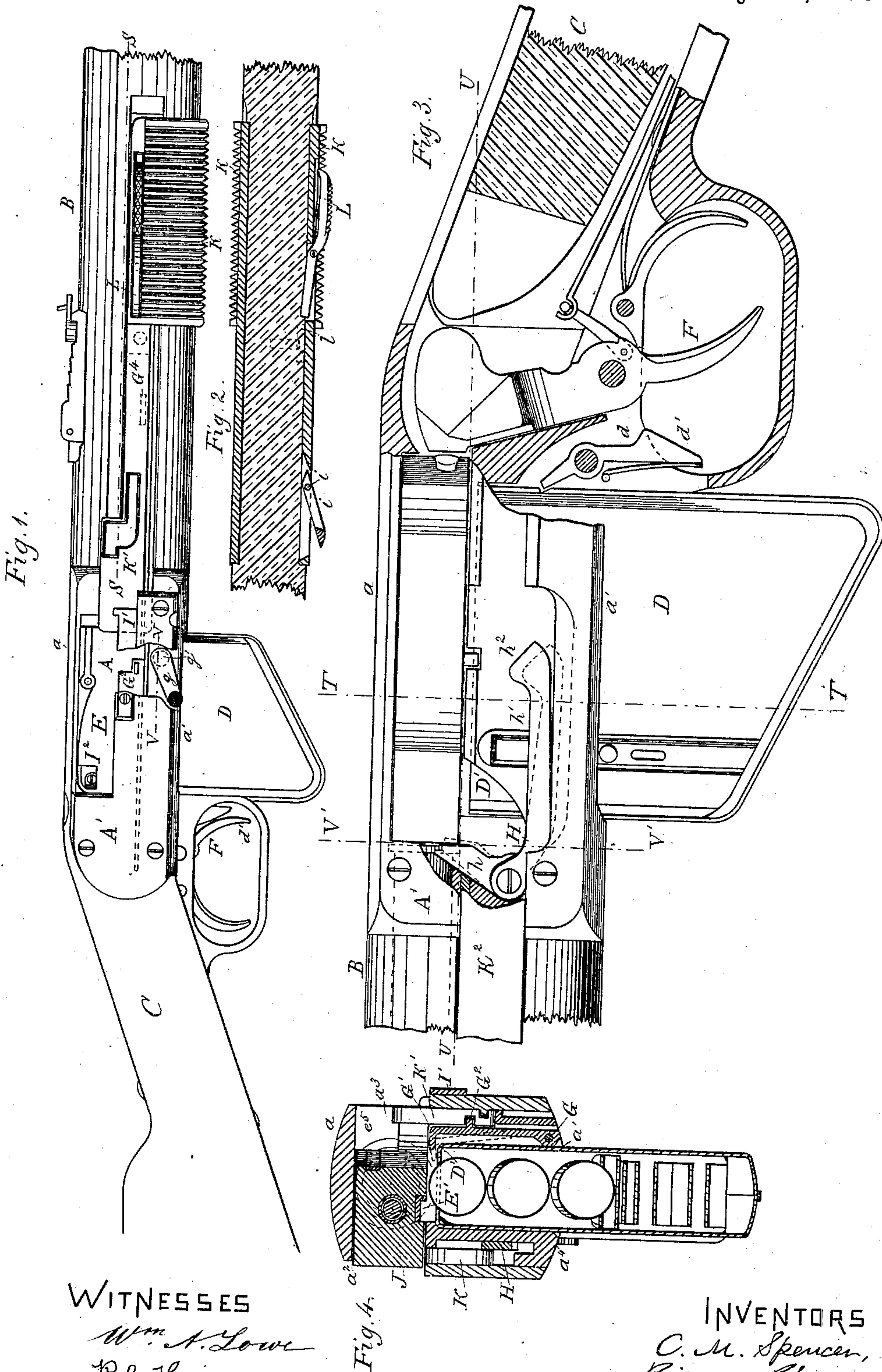
C. M. SPENCER & R. RHODES.

3 Sheets—Sheet 1.

MAGAZINE GUN.

No. 299,282.

Patented May 27, 1884.



WITNESSES

Wm. A. Lowe  
R. L. Howe

INVENTORS

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(No Model.)

C. M. SPENCER & R. RHODES.<sup>3</sup> Sheets—Sheet 2.

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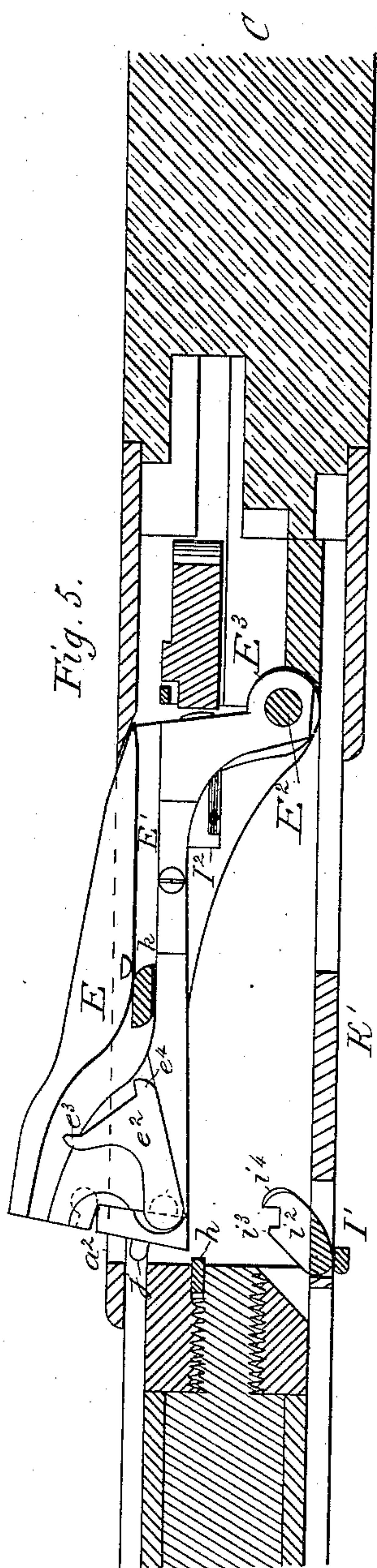


Fig. 5.

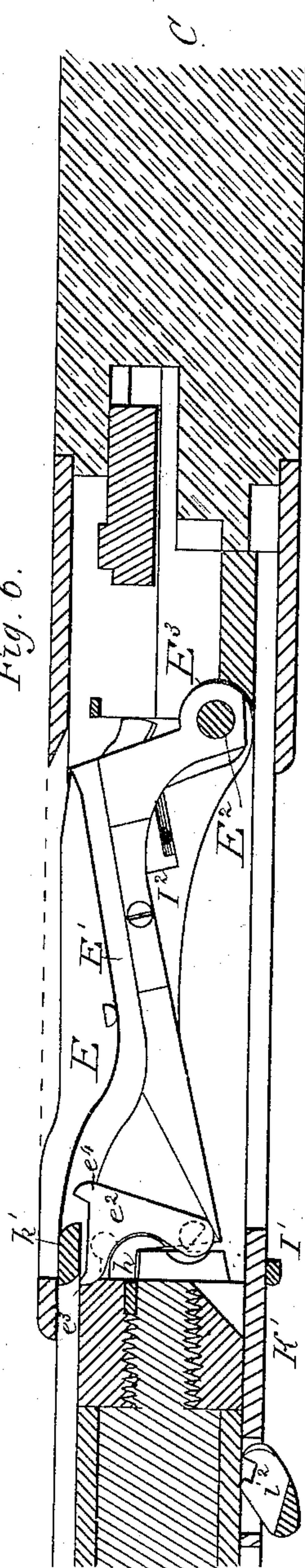


Fig. 6.

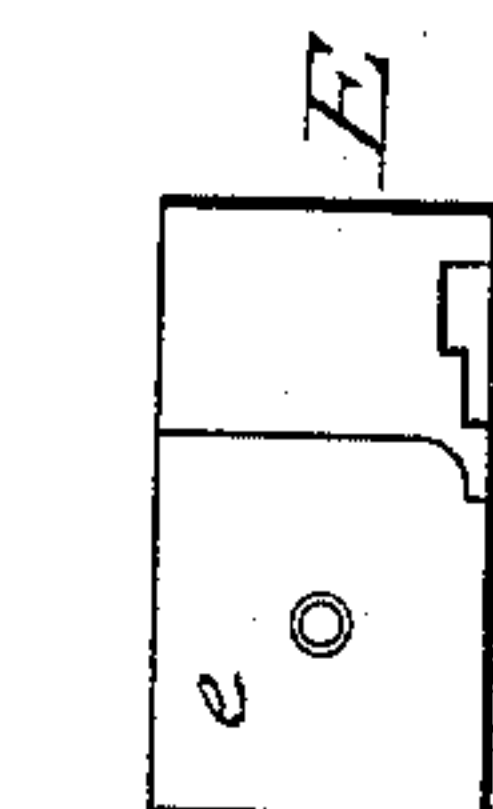


Fig. 9

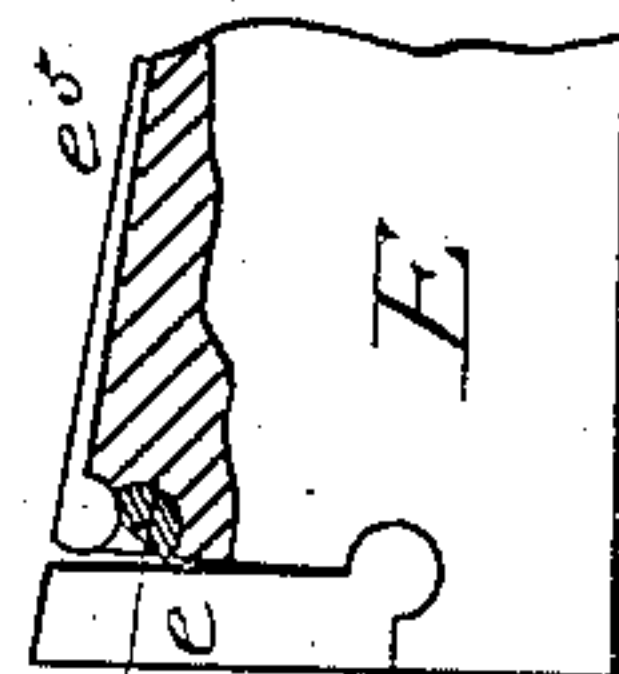


Fig. 8.

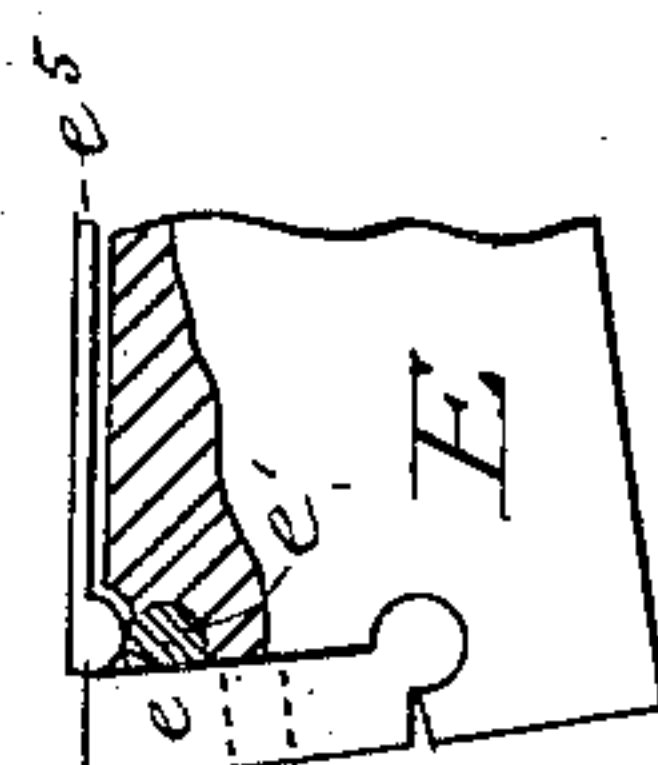


Fig. 4.

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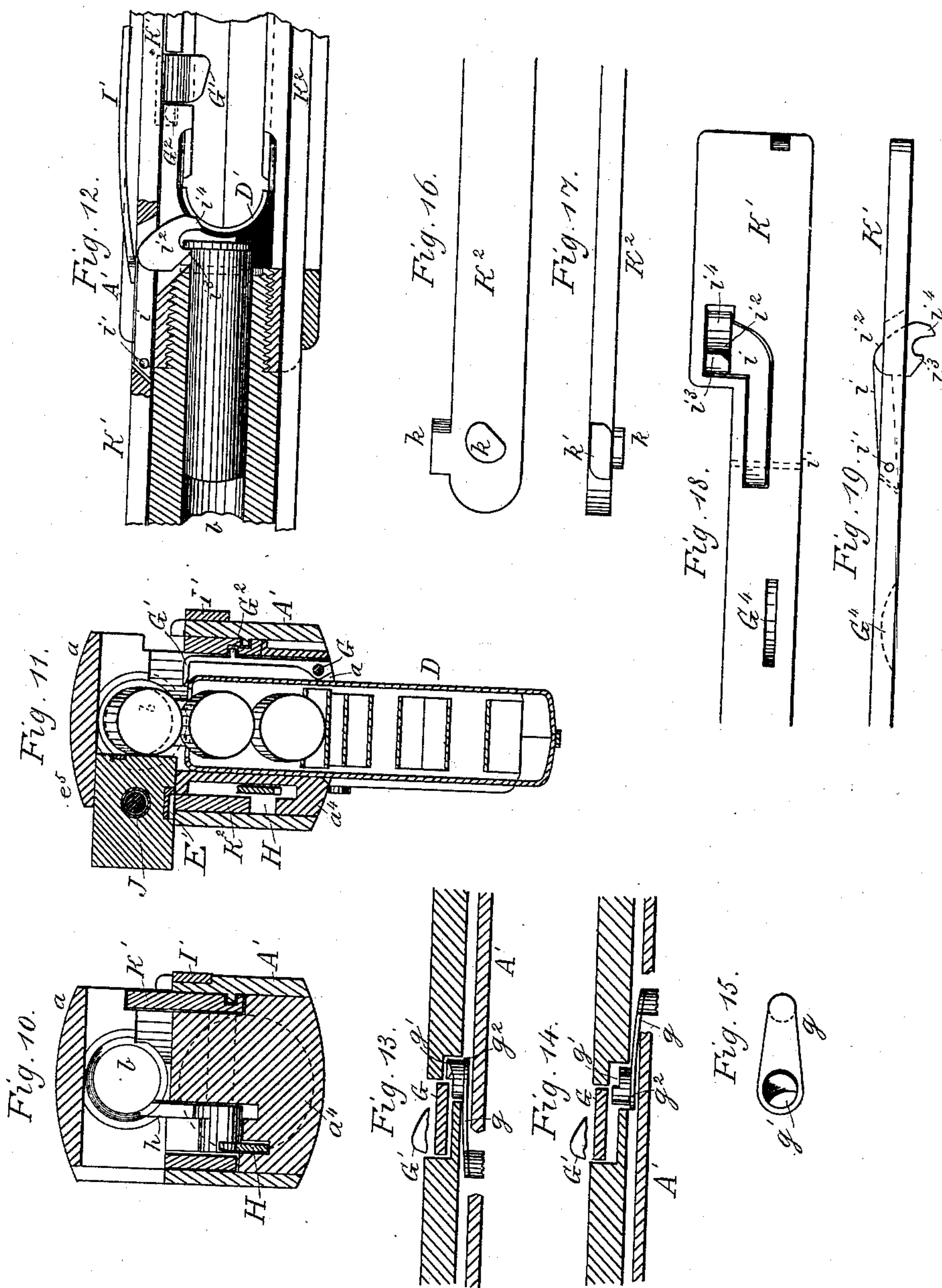
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# UNITED STATES PATENT OFFICE.

CHRISTOPHER M. SPENCER AND RICHARD RHODES, OF WINDSOR, CONN.

## MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 299,282, dated May 27, 1884.

Application filed February 23, 1884. (No model.) Patented in England July 23, 1883, No. 3,616; in France July 25, 1883, No. 156,732, and in Belgium July 26, 1883, No. 62,137.

*To all whom it may concern:*

Be it known that we, CHRISTOPHER M. SPENCER and RICHARD RHODES, of Windsor, Connecticut, have invented certain Improvements in Magazine-Guns, of which the following is a specification.

Our improvements relate to the class of magazine-guns in which the motion to actuate the reloading apparatus is derived from a slide situated forward of the receiver and reciprocating in a line parallel with the axial line of the barrel, which slide can be operated by one hand, while the other hand grasps the stock and holds it against the shoulder of the person using the gun. In former magazine-guns of this character the breech-block rocked upon a horizontal axis, and a reciprocating slide was employed to rock the breech-block in one direction and a spring to rock the breech-block in the opposite direction. By our invention the breech-block is made to rock upon a vertical axis in a plane across the top of the receiver and in line with the barrel, and its movements in both directions are effected by positive means.

In connection with our improvements we employ Richard Rhodes's invention of a breech-block rocking upon a vertical axis, in combination with an automatically-operating check for controlling the delivery of cartridges from the cartridge box or magazine, and preventing a cartridge from getting in the way of the breech-block as the latter rocks inward toward its firing position in the rear of the chamber, which said invention of Richard Rhodes is described and claimed in his application for a patent therefor, filed July 31, 1883. In the loading operation, the first part of the backward excursion of the actuating-slide rocks the breech-block laterally outward, and the next part extracts the empty shell from the chamber and throws it out of the receiver, and by releasing a check permits a fresh cartridge to be thrust upward by the ejecting-spring of a cartridge-box, the mouth of which is inserted in a slot in the bottom of the receiver, and in which box the cartridges are superposed sidewise. The last portion of the backward movement of the slide sets the hammer at full-cock. The first portion of the forward excursion of the slide carries the upper-

most cartridge into the chamber and actuates the check for holding back the other cartridges in the box, and the latter portion of its excursion rocks the breech-block into the position which it occupies when the gun is ready for firing. The cartridge-box is of the trapezoidal form heretofore employed for holding cartridges superposed sidewise. It is detachable, and is held in position in the usual manner by a spring-latch, the thumb-piece of which projects into the space within the trigger-guard in front of the trigger, so that in the act of detaching the cartridge-box the latter is grasped by the hand, while the thumb presses upon the latch, thus releasing the latch and permitting the box to be detached, so that a box containing a fresh supply of cartridges may be inserted in its place.

The accompanying drawings of a magazine fire-arm containing our improvements are as follows:

Figure 1 is an elevation of the right-hand side of the receiver and adjoining portions of the stock and barrel. Fig. 2 is a longitudinal section through the line S S on Fig. 1. Fig. 3 is a left-hand side elevation upon a larger scale, partly in section, showing the latch for holding the magazine in place, and also showing the bell-crank lever for starting the shell from the chamber. Fig. 4 is a transverse section of the receiver and magazine through the line T T on Fig. 3. Fig. 5 is a longitudinal section through the line U U on Fig. 3, showing the under side of the breech-block, and showing the breech-block thrown outward. Fig. 6 is a section similar to that shown in Fig. 5, but showing the breech-block swung inward into the firing position. Fig. 7 is a view partly in section of the under side of the forward end of the breech-block, showing the hinged plate bearing against its seat upon the end of the breech-block. Fig. 8 is a view similar to that shown in Fig. 7, showing the hinged plate rocked outward from its seat by the turning of the cam-shaft upon which it bears. Fig. 9 is a front view of the breech-block. Fig. 10 is a transverse vertical section through the line U U on Fig. 3. Fig. 11 is a transverse vertical section through the line T T on Fig. 3, showing the breech-block swung outward. Fig. 12 is a central longitudinal hori-



zontal section of the chamber and adjoining parts of the receiver. Figs. 13 and 14 are horizontal longitudinal sections of the right-hand side wall of the receiver, partly through the line V V on Fig. 1, but showing the different positions the lip  $G'$  of the check is made to assume by varying the position of the spiral cam formed upon the inner end of the hub  $g'$  of the crank-lever  $g$ . Fig. 15 is an elevation of the inner end of the hub  $g'$  and the inner side of the crank-lever  $g$ . Fig. 16 is an elevation of the inner side of the rear portion of the left-hand arm,  $K^2$ , of the actuating-slide, and Fig. 17 is a top view thereof. Fig. 18 is an elevation of the inside of the rear portion of the right-hand arm,  $K'$ , of the actuating-slide, and Fig. 19 is a top view thereof.

The drawings represent the receiver A and portions of the barrel B and stock C of the gun. The receiver is closed at the top  $a$ , but is slotted at the bottom  $a'$  to admit the mouth of the trapezoidal box D for containing a supply of cartridges superposed sidewise. The upper portion of the left-hand side wall,  $a^2$ , of the receiver is slotted to allow space for the breech-block E, and the right-hand side wall,  $a^3$ , of the receiver is correspondingly slotted to allow the empty shell to be thrown out of the receiver in the act of reloading, and also to allow access to the chamber for the purpose of permitting the insertion of a cartridge into the chamber by hand, if desired. The stock in the rear of the receiver is suitably recessed to receive the usual lock mechanism. The hammer-arm F is provided with an extension which projects into the space within the trigger-guard, in front of the trigger, and by means of which the hammer can be cocked or uncocked. The cartridge-box D is held in position by a spring-latch,  $d$ , the thumb-piece  $d'$  of which projects into the forward portion of the space within the trigger-guard, in front of the hammer-arm. The cartridges are held in the box by the usual stationary lips,  $D'$ , bearing upon the base of the uppermost cartridge, and by the movable check G, the inwardly-turned lip  $G'$  of which is adapted to bear upon the shank of the uppermost cartridge. The check G is a tilting plate seated in a recess formed in the inner side of the right-hand wall of the receiver. Its upper end bends inward, forming the lip  $G'$ . Its outer side is provided with the outwardly-projecting ear  $G^2$ , which projects through a slot in the wall of the receiver into the path of the right-hand arm,  $K'$ , of the actuating-slide K, which is situated forward of the receiver, in convenient position to be grasped and reciprocated by one hand, while the stock is held against the shoulder by the other hand. By the contact of the ear  $G^2$  with the inner side of the arm  $K'$  the check G is tilted inward, carrying the lip  $G'$  partially across the mouth of the cartridge-box. This contact continues, and the resulting position of the check is maintained until the arm  $K'$  has so

far progressed in its backward excursion as to have partially withdrawn the empty shell from the chamber, at which time a groove,  $G^4$ , formed longitudinally in the inner side of the arm  $K'$ , is brought opposite to the ear  $G^2$ , thus discontinuing the bearing upon the ear  $G^2$ , and thereby releasing the check G. By the further backward movement of the arm  $K'$  the empty shell is withdrawn from the chamber and discharged from the receiver. The forward ends of the cartridges in the magazine are then tilted upward by the action of the ejecting-spring in the bottom of the cartridge box or magazine. In rising the pressure of the shank of the uppermost cartridge upon the edge of the lip  $G'$  rocks the released check G outward, and the ear  $G^2$  continues to project into the groove  $G^4$  during the latter part of the backward excursion of the arm  $K'$ , and during so much of the forward excursion as ensues before the base of the cartridge which is being inserted in the chamber has been pushed forward beyond the shank of the cartridge lying next underneath. By the collision of the ear  $G^2$  with the rear end wall of the groove  $G^4$  the check G is rocked inward, and is thereby made to hold the forward end of the next cartridge down out of the way of the breech-block, so that the breech-block may be swung inward to its firing position.

In case it should be desired to prevent the feeding of cartridges from the magazine, there is provided a crank-lever,  $g$ , the axis or hub  $g'$  of which projects through the hole  $g^2$ , formed in the right-hand side wall of the receiver, and bears upon the edge of the check G. The outer side of the right-hand wall of the receiver is recessed to allow space for the swing of the crank-lever, and the crank-lever is held in its seat by the removable plate  $A'$ , screwed upon the right-hand side wall of the receiver. The inner end of the hub  $g'$  of the crank-lever  $g$  is formed into a spiral cam, the projecting portion of which, when the crank-lever is turned forward, bears upon the edge of the check G and forces it inward, thus stopping the ejection of cartridges from the magazine, while by turning the crank-lever backward the projecting portion of the end of the hub  $g'$  is removed from the edge of the check G, and the latter is thus left free to be acted upon alternately by the arm  $K'$  and the cartridges successively ejected from the magazine, as has been described. The front wall,  $a^4$ , of the receiver is vertically slotted from the mouth of the chamber  $b$  downward to receive the short arm of the bell-crank lever H. The upper end of the short arm  $h$  of this lever is made to form a portion of the seat, against which bears a portion of the inner edge of the flange of the cartridge inserted into the chamber. The horizontal arm  $h'$  of the bell-crank lever H is provided at its rear end with the upwardly-projecting ear  $h^2$  for engagement by the instrumentality which, at the proper time, rocks the horizontal arm  $h'$  downward, and



thus rocks the vertical arm *h* backward and assists in starting the cartridge-shell from the chamber.

The operation of starting the shell out of the chamber is participated in by the extractor I, which is pivoted to the right-hand arm, K', of the actuating-slide K, the left-hand arm, K<sup>2</sup>, of which is provided, near its inner end, with the inwardly-projecting pin *k*. The pin *k* is the instrumentality for operating the bell-crank lever H in the manner and for the purpose which has been described. The right-hand arm, K', of the actuating-slide is slotted to receive the extractor I. The forward end of the shank *i* of the extractor is secured to the arm K' by the vertical pivot *i'*. The rear end of the shank of the extractor bends upward and joins the inwardly-projecting horizontal plate *i*<sup>2</sup>, the inner face of which is provided with the two jaws *i*<sup>3</sup> and *i*<sup>4</sup>, the space between these jaws being the notch for receiving the flange of the cartridge. The forward jaw, *i*<sup>3</sup>, is the extracting-jaw, and to enable it to perform its functions the extractor is at the proper time so rocked inward that the jaws are carried astride the flange of the shell lying in the chamber. The rocking inward of the extractor is effected by the collision of the rounded rear end of the plate *i*<sup>2</sup> with the forward end of the stiff flat spring I', which is screwed fast to the outer side of the removable plate A'. The shell, having been started from the chamber by the combined action of the extractor and the bell-crank lever H, is carried backward as the actuating-slide continues its backward excursion until the flange of the shell strikes against the shoulder I<sup>2</sup>, formed near the rear end of the inner side wall of the breech-block. By the further backward movement of the extractor, after this collision has taken place, the shell is tilted sidewise and thrown laterally out of the receiver. As soon as the shell has been thus thrown out of the receiver, the uppermost cartridge contained in the magazine is thrown upward by the magazine-spring, so that its flange enters the notch between the jaws *i*<sup>3</sup> and *i*<sup>4</sup>, and therefore, when the actuating-slide is moved forward, the jaw *i*<sup>4</sup> carries forward the cartridge thus thrown upward from the magazine and pushes it into the chamber *b*. By the last part of the backward movement of the actuating-slide the pin *k* is carried against and pushes back the hammer-arm, and thus sets the hammer at full-cock. The swinging of the breech-block is effected by the action of the ear *k'*, projecting upward from the left-hand arm, K<sup>2</sup>, of the actuating-slide, near its rear end. The ear *k'* engages the cam-groove E', formed in the under side of the breech-block. The forward portion of this cam-groove, as will be seen, curves inward from a point near the outer side of the breech-block to a point near the inner side, and then continues backward in a straight line parallel with the inner side of the breech-block. This slot is so shaped and located that when the ear

*k'* occupies its forward position the breech-block is rocked inward, so that the plate on its forward end bears against the base of the cartridge in the chamber and the firing-pin is brought in line with the center thereof. The plate *e* on the forward end of the breech-block swings upon a vertical axis. When the actuating-slide is pulled back, the plate is free to bear upon its seat on the end of the breech-block; but in the last portion of the motion of the ear *k'* the plate *e* is rocked outward by turning of the cam *e'*, seated transversely in the end of the breech-block beneath the plate *e*. This cam is rocked by means of a bifurcated crank-lever, *e*<sup>2</sup>, one end of which is secured to the end of the cam-shaft. The under side of the breech-block is recessed to allow space for the sway of the crank-lever *e*<sup>2</sup>, and when the crank-lever is thrown forward both of its jaws *e*<sup>3</sup> and *e*<sup>4</sup> project slightly across the cam-groove E'. By the first portion of the backward movement of the actuating-slide the rear end of the ear *k'* is brought into collision with the rear jaw, *e*<sup>3</sup>, of the crank-lever, and thus rocks the crank-lever backward until by the action upon the cam-shaft *e'* of the flat spring *e*<sup>5</sup>, secured to the inner side of the breech-block, the bifurcated crank-lever is swung so far back that the jaw *e*<sup>4</sup> is carried clear of the cam-groove E'. In this position, however, the jaw *e*<sup>3</sup> of the bifurcated crank-lever continues to extend over the cam-groove E', so that in the forward movement of the actuating-slide it is in position to be engaged and carried forward by the ear *k'*. The usual firing-pin, J, is inserted longitudinally through the breech-block, and the plate *e* is centrally perforated to admit the forward end, *j*, of the firing-pin. The axis upon which the breech-block swings is afforded by the vertical screw E<sup>2</sup>, which is inserted through a hole in the top of the receiver and screwed into the hub E<sup>3</sup> of the breech-block. The rear wall of the receiver is recessed to form a bearing for the hub of the breech-block, which is concentric with its axis.

In order to hold the actuating-slide stationary at the conclusion of its forward excursion, it is longitudinally slotted near the top upon one of its sides, to admit the pivoted spring-latch L, the rear end of which is adapted to spring inward against the shoulder *l*, formed in the seat of the actuating-slide.

We are aware of an application for Letters Patent No. 102,389, for an improvement in magazine fire-arms, heretofore made by Richard Rhodes, July 31, 1883, and we do not here claim anything therein claimed.

We claim as our invention—

1. In a magazine-gun, a breech-block oscillating upon a vertical axis at its rear end in a plane at the rear of the chamber, in combination with an actuating-slide situated forward of the receiver and reciprocating in a path parallel with the axial line of the barrel, and a connection between the said actuating-slide and the said breech-block, whereby the posi-



tion of the breech-block during all parts of its movement in either direction is controlled by the position of the said actuating-slide, substantially as specified.

5 2. A breech-block swinging in a horizontal plane in the rear of the chamber and provided upon one of its horizontal sides with a suitably-shaped cam-groove, in combination with a cam-pin working in said groove, connected  
10 with an actuating-slide situated forward of the receiver and reciprocating in a path parallel with the axial line of the barrel, whereby the laterally-outward swing of the breech-block is effected by the first portion of the backward  
15 excursion of the actuating-slide, and the return movement of the breech-block to its firing position is effected by the last portion of the forward excursion of the actuating-slide, substantially as shown and described.

20 3. A breech-block in the rear of the receiver, swinging upon a vertical axis, an actuating-slide situated forward of the receiver, and an arm carried by said actuating-slide, engaging with said breech-block for rocking the said  
25 breech-block outward to permit the withdrawal of the shell from the chamber, in combination with a magazine for successively delivering cartridges into the lower part of the receiver, a spring for thrusting such cartridges upward,  
30 and an inserter provided with a shoulder

adapted to bear upon the base of the cartridge which has been so thrust upward, and connected with and partaking of the motion of the actuating-slide for the purpose of pushing the said cartridge into the chamber during the  
35 first portion of the forward excursion of the actuating-slide, substantially as described.

4. A plate upon the forward end of the breech-block adjustable toward and from said breech-block, in combination with a cam for  
40 forcing the said plate forward and holding it against the base of a cartridge in the chamber when the breech-block is in firing position, a lever on said breech-block for operating the said cam, and an actuating-slide adapted to  
45 impart motion to said lever, substantially as and for the purposes set forth.

5. The hinged plate *e*, the cam *e'*, the bifurcated lever *e''*, the spring *e'''*, all arranged upon the forward end of the breech-block, and the  
50 groove *E'* in said breech-block, in combination with the ear *k'*, working in said groove and connected with and partaking of the reciprocating motion of the actuating-slide *K*, as and for the purposes set forth.

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