

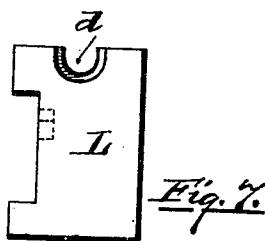
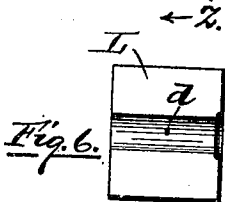
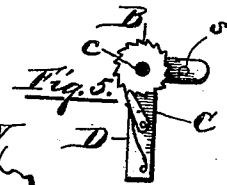
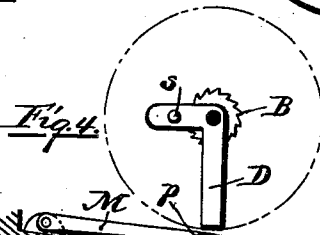
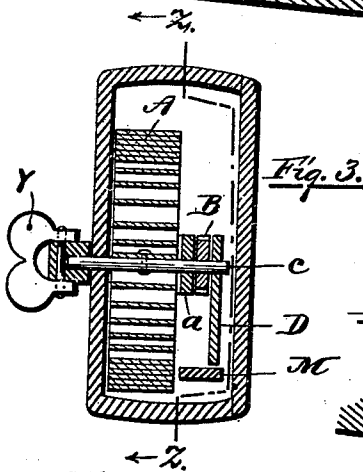
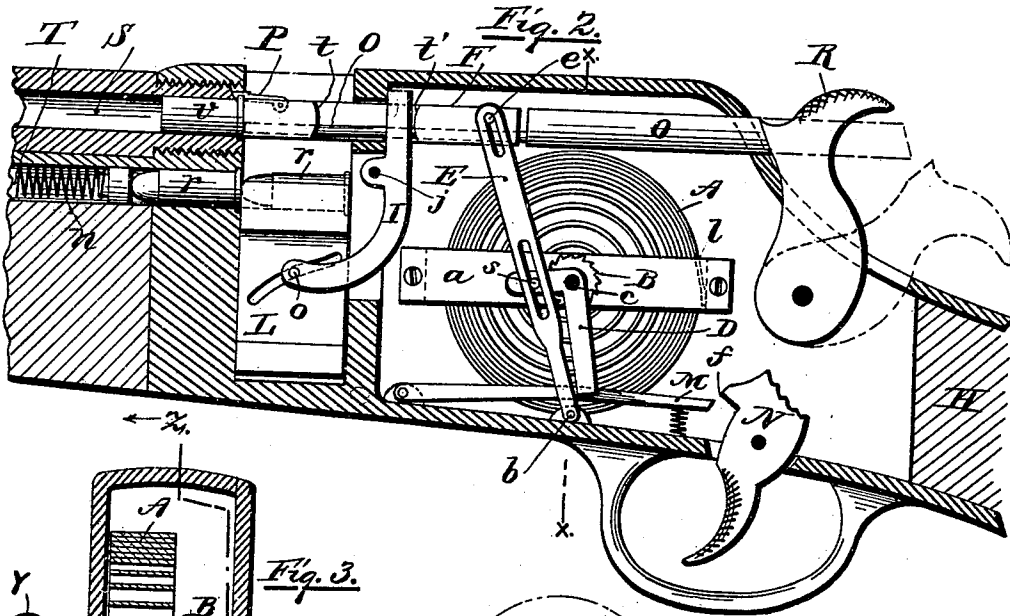
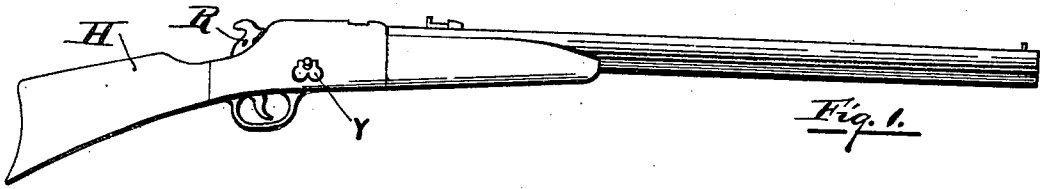
(No Model.)

2 Sheets—Sheet 1.

W. L. KING.
AUTOMATIC FIREARM.

No. 515,526.

Patented Feb. 27, 1894.



Witnesses.

Charles Sumner
E. B. Read

Inventor.

Willis L. King
By Benj. Arnold
Atty.

(No Model.)

2 Sheets—Sheet 2.

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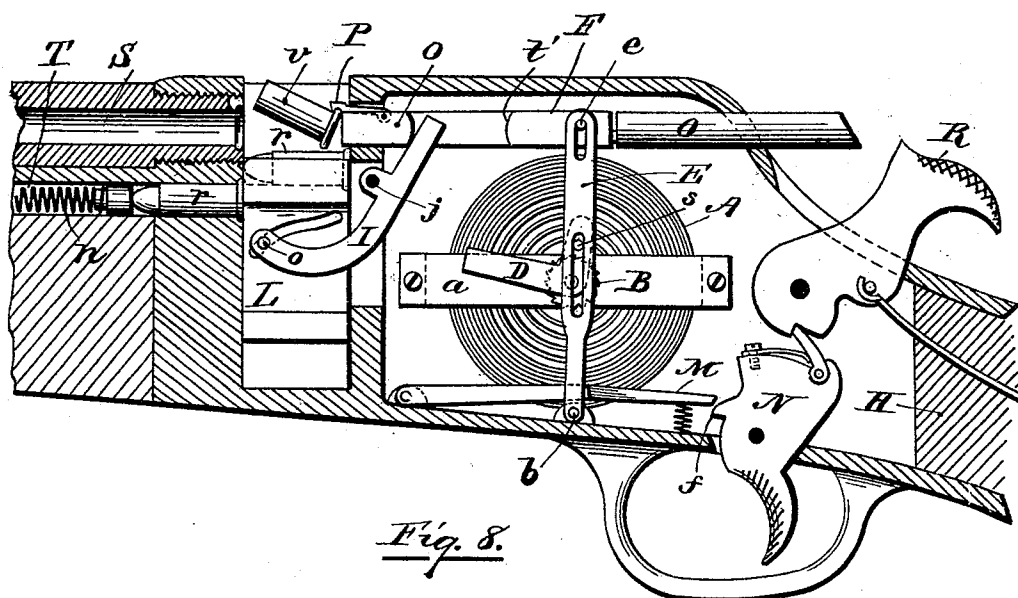


Fig. 8.

Witnesses:

Charles Hamigan,
John B. Lynch

Inventor:

Willis L. King
by Benj. Arnold
Atty.

UNITED STATES PATENT OFFICE.

WILLIS L. KING, OF APPONAUG, ASSIGNOR TO HIMSELF, AND LOUIS K. POTTER, OF WARWICK, RHODE ISLAND.

AUTOMATIC FIREARM.

SPECIFICATION forming part of Letters Patent No. 515,526, dated February 27, 1894.

Application filed March 17, 1893. Serial No. 466,415. (No model.)

To all whom it may concern:

Be it known that I, WILLIS L. KING, of Apponaug, in the county of Kent and State of Rhode Island, have invented certain new and useful Improvements in Magazine-Firearms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of fire arms called "magazine guns," because they are provided with receptacles for carrying a relay of charges, or, to a certain extent, their own supply of ammunition, and it refers especially to mechanical appliances for transferring the charges from the magazine that holds them to the barrel of the piece to be discharged. It is illustrated in the accompanying drawings.

Figure 1, represents an elevation of the gun from the right side, on a smaller scale than the other figures. Fig. 2, is a view of a part of the left side of the gun, with the side plate removed to show the arrangement of the devices inside. Fig. 3, represents a vertical cross section of the gun, taken on lines *x, x*, in Fig. 2. Figs. 4 to 7, show parts of the mechanism in detail, as will be hereinafter explained. Fig. 8 represents the same section as is shown in Fig. 2, with the mechanism in the position in which the cartridge shell is ejected, and a new cartridge is supplied.

These improvements apply to that type of magazine arms that have the magazine placed under the barrel of the piece, and that are provided with a vertically sliding carrier placed in a chamber between the barrel and stock of the gun, to raise the cartridge from the magazine to the opening of the barrel. The portion of the gun shown in Fig. 2, consists of a chamber holding the operating mechanism, a chamber holding the carrier block, with a portion of the barrel and magazine attached, and the operating mechanism. A short, horizontal shaft *c*, extends part of the way across the stock, near the center of the chamber, with a bearing at one end, in the right side of the chamber, and at the other end, a bearing in a bracket *a*, secured to the

same side of the chamber. The shaft *c*, has an involute steel spring *A*, placed around it, the inner end of the spring being made fast to the shaft *c*, and the outer end secured to the end of the bracket *a*, at *l*. The inner end of the shaft *c*, extends through the bracket *a*, far enough to receive a ratchet wheel *B*, which is made fast thereon, and a knee lever *D*, that is held loose on the shaft. A pawl *C*, pivoted to the lower limb of the lever *D*, engages with the ratchet wheel *B*, (see Fig. 5, which is a view of the innerside of the ratchet wheel and lever,) and causes the lever *D*, to turn the ratchet wheel when it goes in one direction; but leaves it idle when the shaft and wheel is turned in the other direction, which is, when the spring is being wound up. The spring is wound up by means of a key *Y*, attached to the end of the shaft *c*, that projects through the side of the chamber. A horizontal lever *M*, pivoted at its front end to the lower side of the chamber, is cut out from its free end to the point *p*, so as to form a notch or shoulder at that place, against which the lower end of the lever *D*, catches, and is prevented from being rotated by spring *A*, through ratchet wheel *B*, when the lever *M*, is up, as in Fig. 2. The free end of the lever *M*, is lengthened out to be operated by the trigger *N*, as will be hereinafter explained.

A vertical lever *E*, is held at its lower end on a pivot *b*, attached to the lower side of the chamber almost directly under the shaft *c*, and a lengthwise slot is made in the lever where it crosses the horizontal arm of the knee lever *D*, to receive freely, a pin *s*, fast in that arm. Another slot is made in the lever *E*, near its upper end, to receive freely, the pin *e*, fast in the breech block *F*, which block is made to slide freely through an opening in the front end of the chamber, directly in line with the center of the barrel *S*. This block *F*, is perforated throughout its length, to receive freely, the smaller portion of the firing pin *O*, the rear portion of which is made larger, and extends out through an opening in the back part of the chamber, in position to be struck by the hammer *R*.

The breech block *F*, has a shell extractor *P*, pivoted in a recess on the top of its front end, and is recessed away on one side between

the points t , t' , down to the hole for the firing pin, to make shoulders at t and t' , to strike against the upper end of the lever I, which is pivoted at j , in a recess in the front end of the chamber. The lower part of the lever I, is curved forward and extended through a recess in the end of the chamber, into the space between the barrel and chamber, in which the carrier block L, is located. The carrier block L, has a recess d , made in the top of it, to receive the cartridge from the magazine, (see Figs. 6 and 7 which are views of top and rear side of the block, respectively.)

A vertically reciprocating motion is given to the carrier L, for the purpose of raising the cartridge from the magazine to the barrel of the piece, by means of a pin o , fast in the lower end of lever I, the pin sliding in a groove in the side of the block. The magazine T, as before stated, is placed just below the barrel S, and is provided with the usual long open spiral spring n to press the cartridge toward the rear end. The kind of lock used is not material, excepting that it should be a self-cocking one, and preferably having a double action or half cocking arrangement, though a single action lock may be used with these improvements.

The sequence of the motions of the parts in operating, is as follows: Starting with the parts in position, as seen in Fig. 2, with the spring A, wound up, a cartridge r , having been pushed into the recess d , in the carrier L,—the first part of the motion of drawing back the trigger N, to throw back the hammer R, to half cock, carries the point f , by the end of the lever M, and depresses it for an instant in passing, sufficiently to lower the notch p , and leave the lever D, free to receive one revolution from the spring A, and be caught again on that notch when the turn is complete. In making this revolution, the pin s , in the knee lever D, will move the lever E, back, and forward again to its first position, carrying the breech block F, and firing pin o , back by the pin, as shown by dotted lines Fig. 2, and back again. In the first part of its motion back, the breech block will not move the lever I; but when the shoulder t , reaches the lever I, and, by pushing it back, raises the carrier L, the forward end of the breech block will have got so far back as to be entirely out of the way of the carrier and cartridge when they are clear up and the cartridge is opposite to the bore of the barrel. On the return motion of the breech block by the lever E, in the last half of the revolution

of the lever D, the lever I, will not be pushed forward, until the shoulder t' , strikes it, and by that time the breech block F, will have pushed the cartridge so far into the barrel that the carrier can safely leave it to begin its downward motion by means of lever I, to its first position, to receive another cartridge from the magazine. The pressure of the spring in the magazine, will press the next cartridge against the carrier, when up, and prevent it from moving down, except as the lever I, moves it. After that part of the motion of the trigger that has released the spring A, and the mechanism to perform the loading of the gun, as above described, and has at the same time thrown back the hammer to half cock, the gun may be held in this condition, at half cock, and at any time discharged, by drawing back the trigger to release the hammer, and allow it to strike the rear end of the firing pin O, and explode the cartridge.

Having thus described my improvements, I claim as my invention—

1. In a magazine gun having a horizontally sliding breech block, a vertically sliding carrier block operatively connected to said breech block, a knee lever connected to a vertical lever to move said breech block and an involute spring to operate the knee lever, substantially as described.

2. In a magazine gun, the following instrumentalities: an involute spring, a shaft to which said spring is attached, a ratchet wheel fast on said shaft, a knee lever held loosely on said shaft, a pawl pivoted to the knee lever and engaging the ratchet wheel, a catch lever to hold the lower end of the knee lever and arranged to be operated by the trigger, substantially as described.

3. In a magazine gun, the following instrumentalities: a vertically sliding carrier block, a horizontally sliding breech block, a lever connecting the breech block and carrier block, a vertical lever swinging on a pivot at its lower end and connected at its upper end to the breech block, a knee lever held loosely on a shaft and connected to said vertical lever, an involute spring fast on the same shaft, a ratchet wheel fast on said shaft and connected by a pawl engaging therein with the knee lever, and a lever having a notch to receive the lower end of the knee lever, substantially as described.

WILLIS L. KING.

Witnesses:

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E. B. READ.