

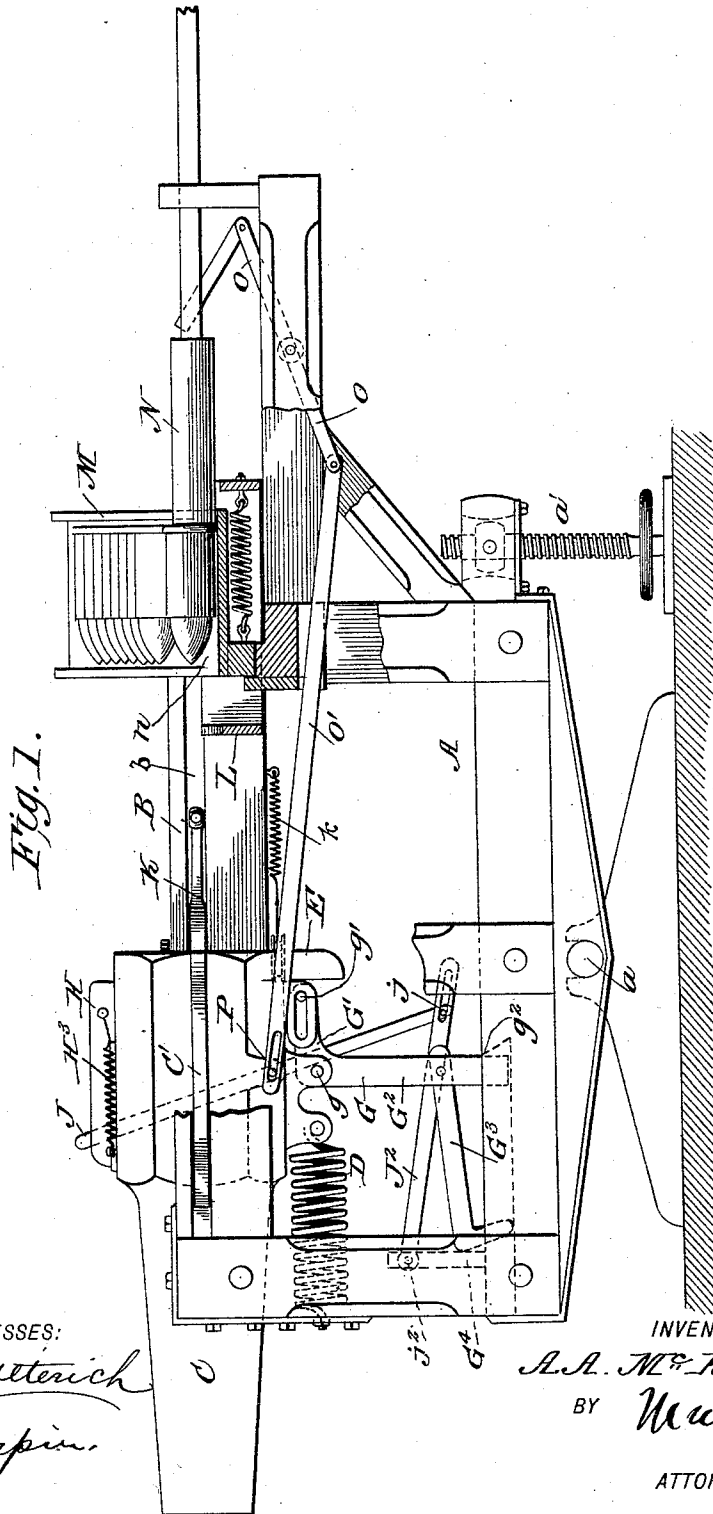
(No Model.)

4 Sheets—Sheet 1.

A. A. McKNIGHT.
RECOIL OPERATED AUTOMATIC ORDNANCE.

No. 536,387.

Patented Mar. 26, 1895.



WITNESSES:
Fred G. Dietrich
P. B. Turpin

INVENTOR
A. A. McKnight
BY *Munn & Co*
ATTORNEYS.

(No Model.)

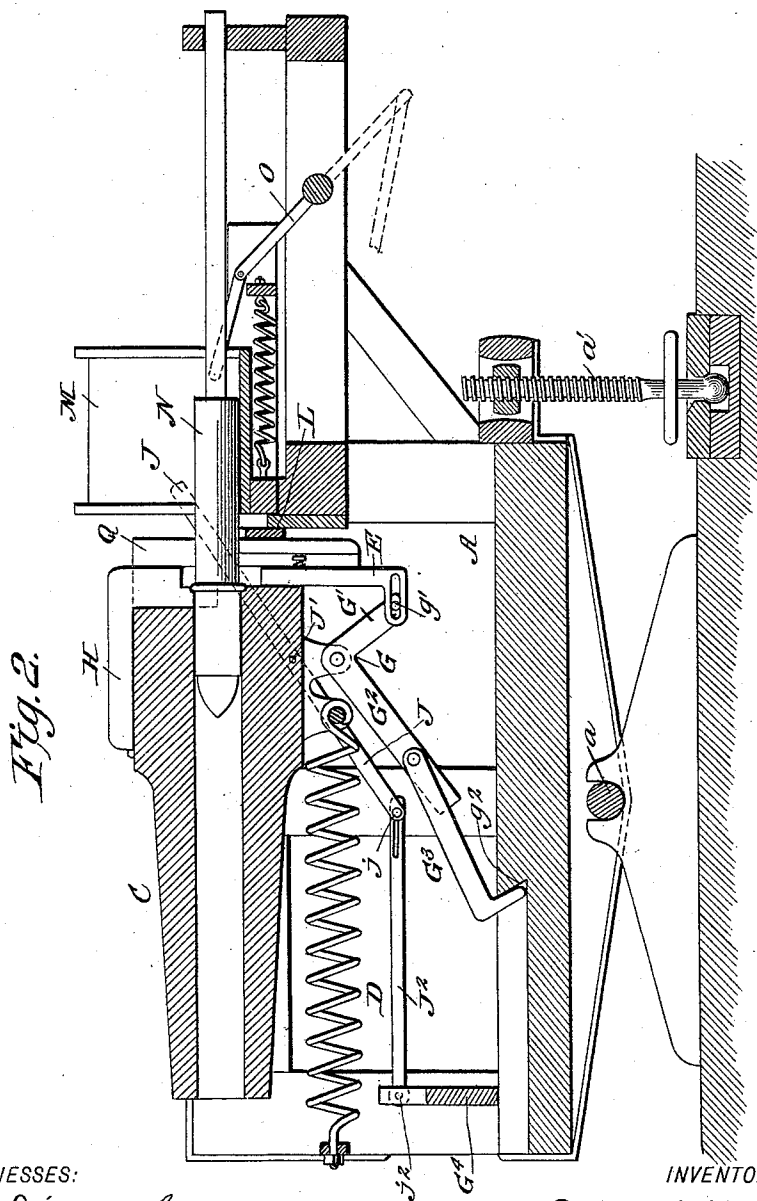
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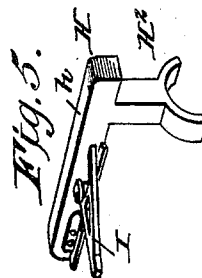
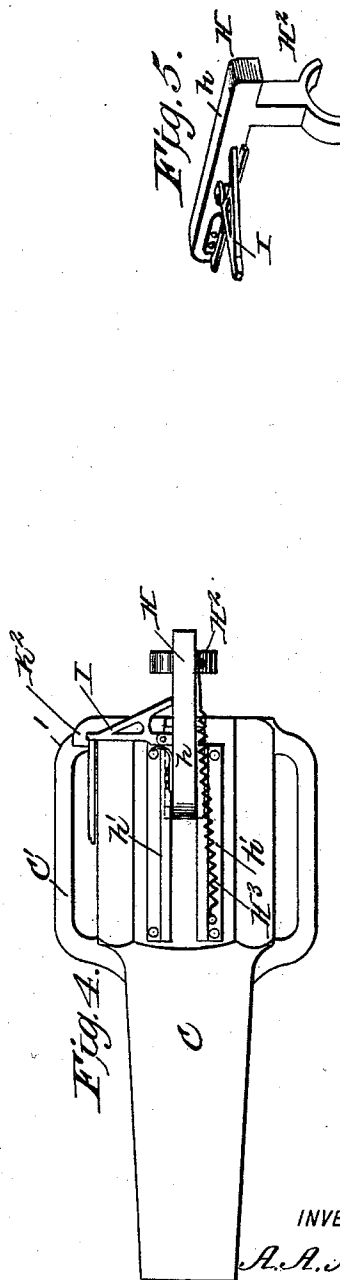
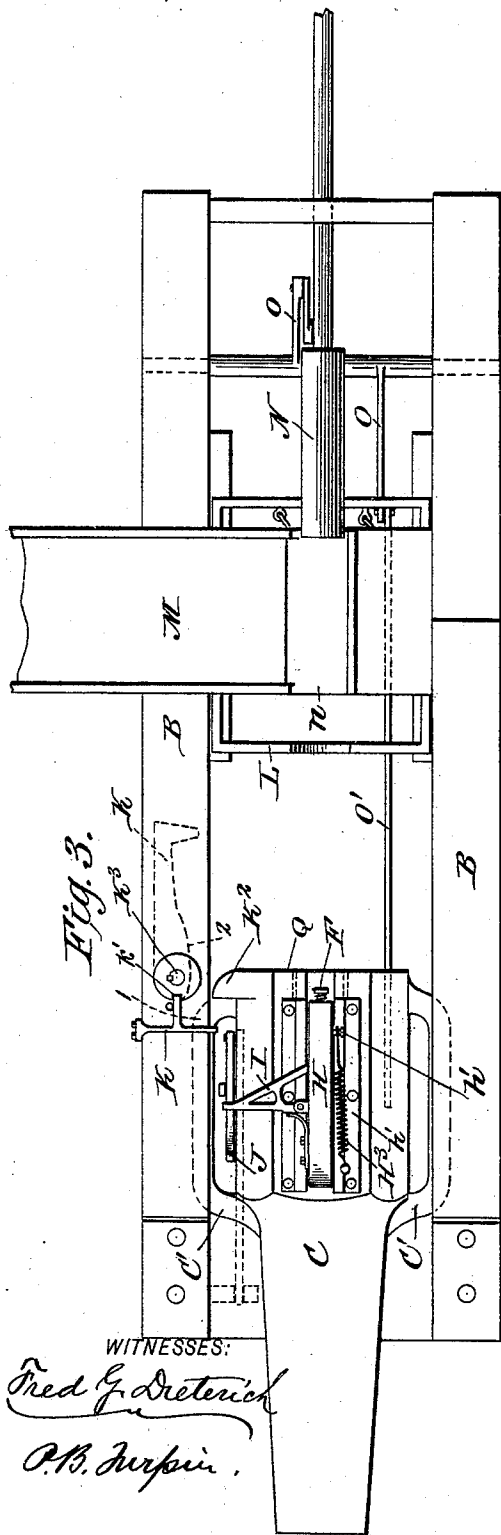
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4 Sheets—Sheet 3.

A. A. McKNIGHT.
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No. 536,387.

Patented Mar. 26, 1895.



INVENTOR

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A. A. McKNIGHT.

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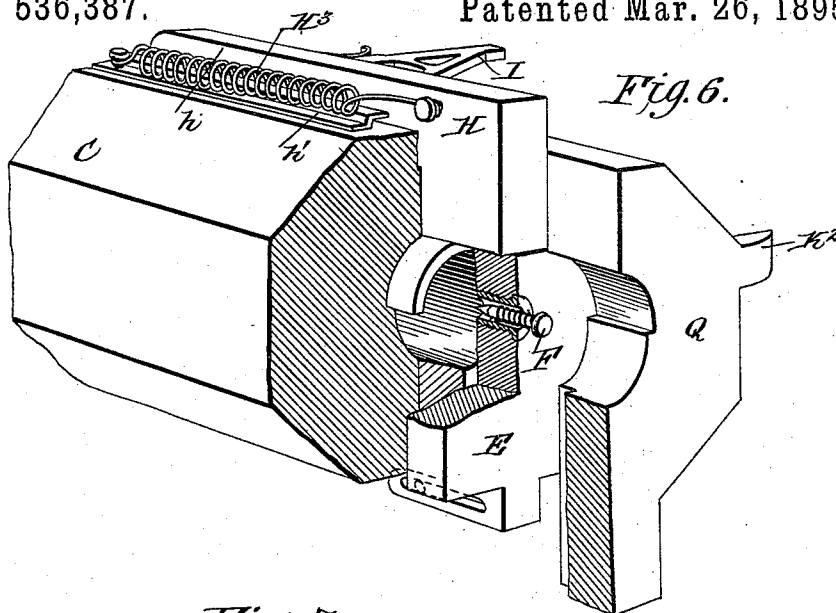


Fig. 6.

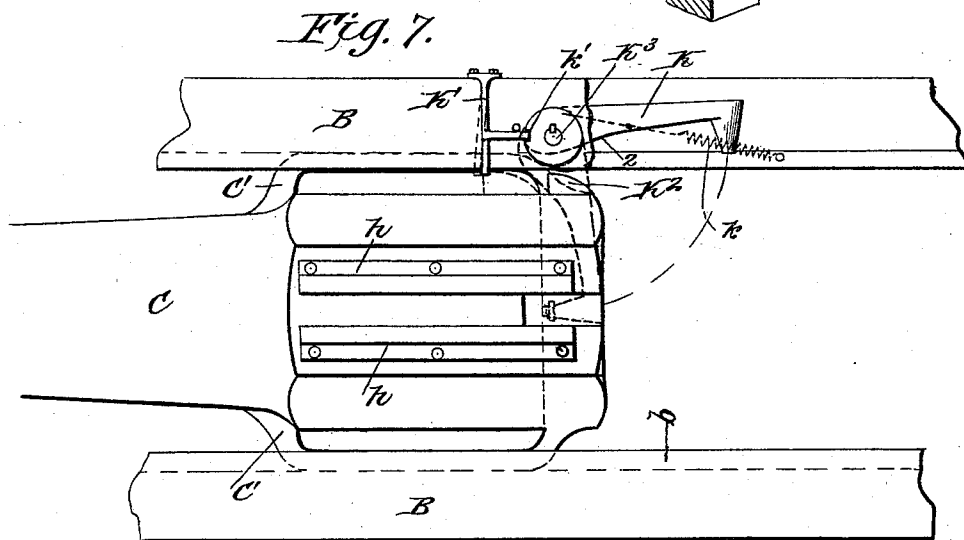


Fig. 7.

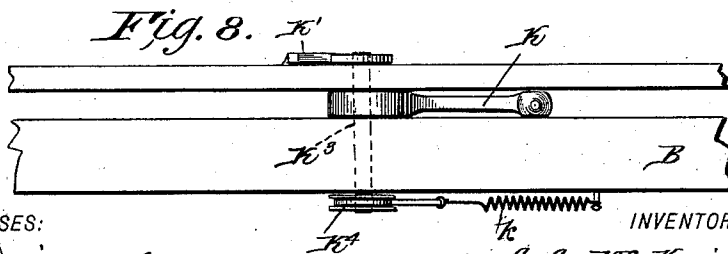


Fig. 8.

WITNESSES:

Fred G. Dietrich
P. B. Surpin.

INVENTOR

A. A. McKnight.

BY

Mann

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALFRED A. MCKNIGHT, OF WILMINGTON, OHIO.

RECOIL-OPERATED AUTOMATIC ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 536,387, dated March 26, 1895.

Application filed January 21, 1893. Serial No. 459,221. (No model.)

To all whom it may concern:

Be it known that I, ALFRED A. MCKNIGHT, of Wilmington, in the county of Clinton and State of Ohio, have invented a new and useful Improvement in Machine-Guns, of which the following is a specification.

This invention is an improved machine gun and relates particularly to a machine gun which will be automatic in its operation its several moving parts being operated after the first firing by the force of the recoil or by springs acting in opposition thereto and the invention consists in the novel constructions, combinations and arrangements of parts as will be hereinafter described and pointed out in the claims.

In the drawings—Figure 1 is a side view part in section of the gun with the parts in firing position. Fig. 2 is a vertical longitudinal section with the parts in loading position. Fig. 3 is a top plan view of the gun. Fig. 4 is a detail plan view of the barrel with the ejector thrown back. Fig. 5 is a detail view of the ejector. Fig. 6 is a perspective view part in section, of the rear end of the gun barrel. Fig. 7 is a detail top plan view illustrating the hammer and Fig. 8 is a detail side view showing the hammer and its supports.

The frame A supporting the movable parts of the gun may have a rocking connection at *a* with a suitable base and a hand screw *a'* may be provided to tilt said frame to any desired angle. This frame has side bars B which support and guide the barrel C as it slides back and forth such barrel having on its opposite sides ribs or flanges C' sliding in slots *b* in the bars B. This barrel is drawn forward by a spring D and is impelled rearwardly by the force of the recoil. As the gun barrel moves rearwardly the hammer is cocked, the breech block is lowered, the ejector is operated to throw out the cartridge, a cartridge is inserted, the gun barrel moved forward, the breech block re-adjusted, the hammer released, the gun fired and the operation proceeds as before.

The breech block E slides vertically in a channel formed vertically in the gun barrel near its rear end, a breech base Q being left in rear and serving to brace the breech block when in firing position. This breech block

projects when the gun is in firing position slightly above the bore. The breech block is provided with the firing pin F and when the gun has been fired and starts rearwardly the breech block is instantly lowered by a bell crank lever G pivoted at *g* to the gun barrel having one arm G' connected at *g'* with the breech block and its other arm G² arranged to engage at *g*² with the frame so that the breech block is lowered at the start of the recoil movement of the gun. The breech block operating lever also has a drag connection, a section G³ which also engages the shoulder like bearing *g*² of the frame, and which section when the barrel moves forward engages the abutment G⁴, throws the breech block up to and locks it in position for firing.

The ejector H is formed with a shank *h* sliding in guides *h'* on the gun and with a head H² to engage the cartridge head and a spring H³ serves to draw the ejector back to normal position after it has been released from its actuating lever. A spring actuated pawl I extends laterally from one side of the ejector shank and is so arranged that it is rigid against pressure to the rear and yields against pressure from the rear so the lever J will press the pawl and ejector on its rearward movement but will slip past said pawl on its return. This lever J is pivoted at J' to the gun barrel, is arranged at its upper end to engage the pawl I and connects at its lower end by a sliding joint at *j* with a drag bar J² which is pivoted at *j*² to the frame. Thus it will be seen the rear movement of the gun will operate after the withdrawal of the breech block to actuate the ejector and throw out the fired cartridge.

The hammer K is actuated by a spring *k* and has a trigger K' engaging in a notch *k'* and adapted to hold the hammer cocked and release it to fire, such trigger being arranged in position for engagement by a portion K² of the gun barrel when the latter reaches its extreme forward position when the hammer is fired. In the construction shown the hammer is on a shaft K³ journaled in the frame and having a pulley K⁴ to which the actuating spring *k* is attached.

At the rear end of the stroke of the barrel I provide a spring cushioned buffer L, and I also provide a cartridge trough or holder M

in which a quantity of the cartridges are placed and are adapted to pass down to align one after the other with a guide or opening *n* through which they are forced by the rammer *N* into the breech in its rearmost position such rammer being operated by a lever *O* connected at one end with the rammer and at its other end with an operating pitman *O'* operated by the movement of the gun barrel being preferably connected with such barrel by a sliding connection at *P* as shown.

In operation the gun barrel is forced back by the recoil, the breech block is lowered, the hammer cocked, the shell ejected, the new cartridge inserted, and the gun travels forward, the breech block is readjusted and the trigger is tripped, the gun fired and the operation proceeds as before. The hammer is cocked by a portion of the barrel at 1 engaging a swelled or projecting portion 2 of the said hammer.

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

1. The combination of the longitudinally movable barrel provided with a transversely movable breech block, the frame in which said barrel is supported and movable, such framing having separated abutments, the lever pivoted to and movable with the barrel and having an arm connected with and operating the breech block and a second arm extended between the separated abutments and arranged for operation thereby, substantially as set forth.

2. The combination of the framing the reciprocating barrel having near its rear end a transverse channel forming a guide for the breech block the block movable in said channel, devices for operating said block, the ejector movable rearwardly from a point in advance of said channel, and devices on the framing for operating said ejector when the block is withdrawn substantially as set forth.

3. The combination of the framing the reciprocating barrel, the breech block the bell crank lever pivoted to the barrel and having one arm connected with the breech block and a drag section connected with the other arm of said lever and engaging abutments on the framing substantially as set forth.

4. The combination of the framing the reciprocating barrel, the ejector, the lever pivoted to the barrel and arranged at one end to actuate the ejector and a connection between the other arm of the lever and the framing substantially as set forth.

5. The combination in a gun of the framing, the hammer pivoted to the framing, the trigger supported on the framing the transversely movable breech block and the reciprocating barrel having portions by which to cock the hammer and pull the trigger substantially as set forth.

6. The combination of the framing the barrel reciprocating therein the rammer carried by the framing and by which to force the cartridge into the barrel and intermediate devices between said barrel and rammer whereby the movement of the barrel will operate the rammer substantially as set forth.

7. The combination of the framing the reciprocating barrel, the cartridge holder supported on the framing in rear of the barrel and having an outlet in alignment with the bore of the barrel, the rammer and connections between the rammer and the barrel substantially as set forth.

8. The combination of the framing the barrel, the transversely movable breech block, the lever pivoted to the barrel and connected with the breech block the rammer and connections between the rammer and barrel substantially as set forth.

ALFRED A. MCKNIGHT.

Witnesses:

BYRON FRANKLIN,
J. C. MARTIN.