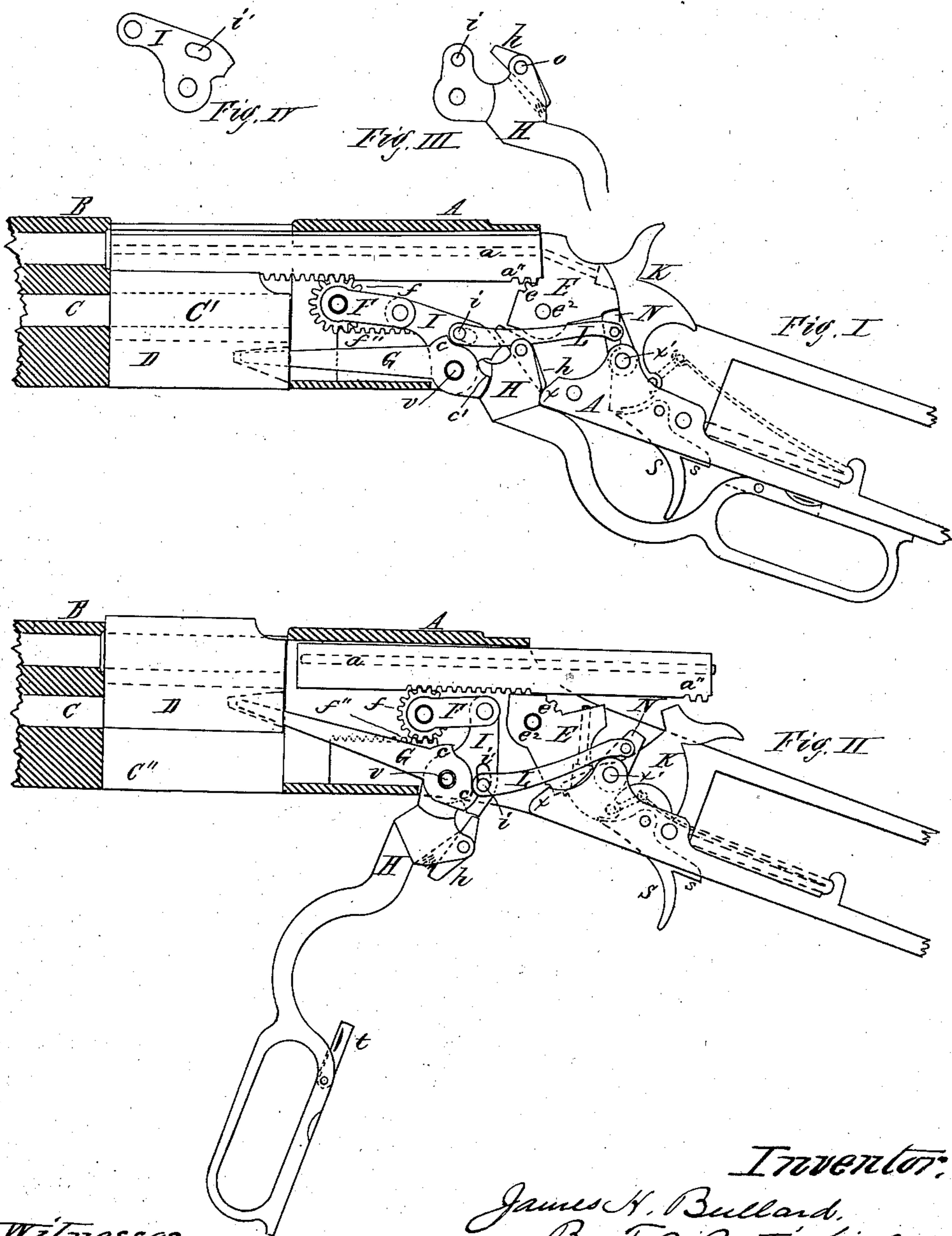


J. H. BULLARD.
MAGAZINE FIRE ARM.

No. 245,700.

Patented Aug. 16, 1881.



Witnesses-

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UNITED STATES PATENT OFFICE.

JAMES H. BULLARD, OF SPRINGFIELD, MASSACHUSETTS.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 245,700, dated August 16, 1881.

Application filed May 5, 1879.

To all whom it may concern:

Be it known that I, JAMES H. BULLARD, of Springfield, in the State of Massachusetts, have invented a new and useful Improvement in Magazine Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon.

My invention has for its object the rapid transfer of cartridges from the magazine in which they are kept into the barrel to be discharged, the prevention of any premature explosion by the forward movement of the hammer, the secure locking of the bolt in place against the cartridge when the latter is exploded, and the rapid loading and discharging of the arm by the simple movement of the lever to and fro.

To this end my invention consists of a swinging lever operating a pivoted arm connected with and moving a carrier, said swinging lever being also connected with a link which carries a pinion traveling in a stationary rack, which pinion moves the bolt to and fro to carry the cartridge from the carrier into the barrel.

The swinging lever is also connected with an arm pivoted to a lock used to secure a vertically-swinging breech-block up firmly against the bolt, the latter being adapted to move the breech-block in both directions. A projecting or pivoted piece on the handle of the swinging lever, which strikes against part of the trigger, adapts the arm to be discharged rapidly by the simple movement of the swinging lever to and fro, all which will be more fully hereinafter described.

Figure I is a longitudinal vertical section of a portion of the frame and barrel of a gun made according to my invention, showing the operating mechanism with the swinging lever thrown back and all the parts in position when the hammer is down or thrown forward.

Fig. II is a similar section, showing the swinging lever thrown forward, the carrier moved up to carry a cartridge into position to be forced into the barrel, and the hammer thrown back at full-cock. Fig. III is a side view of the forward end of the swinging lever. Fig. IV is

a side view of the link which connects the swinging lever with the traveling pinion.

In the drawings, A represents the frame of a magazine fire-arm, in which B is the barrel; C, the magazine, made to contain any desired number of cartridges; D, the carrier, operating in a vertical recess, C', and provided with a recess, C'', (shown in dotted lines,) to receive a cartridge.

G is an arm pivoted in the frame at *v*, the forward end of which arm engages with the carrier D, and by which the latter is moved, and the rear end of said arm is provided with two shoulders, *c* and *c'*.

H is a swinging lever, pivoted also at *v*, and whose forward end is provided with a pin or projection, *i*, as shown in Fig. III, and to which is also pivoted at *o'* a spring pawl or latch, *h*, and the rear end of this swinging lever H forms the trigger-guard, and also the handle by which it is operated, to which handle is pivoted a piece, *t*, the use of which will be more fully hereinafter described. The link I (shown separately in Fig. IV) is pivoted also at *v*, and is provided with an elongated hole, *i'*, through which, when the parts are in place, the projection *i* on the forward end of the lever H protrudes, so that the latter may have a little movement without moving the link and pinion, as will be more fully explained. The forward end of the link is pivoted to the piece F, in which is held a pinion, *f*, traveling to and fro in the stationary rack *f''*, and a bolt, *a*, is arranged to move to and fro in the frame, being actuated by the traveling pinion *f*, whose teeth engage with similar teeth on the lower side of the bolt *a*. This bolt is also provided with projections or teeth *a''* at its rear end, which, when the bolt is moved forward, engage with similar teeth, *e*, on the breech-block E, pivoted at *e'*, which block, when the bolt is moved forward, bears up against the rear end of the bolt to hold it firm.

The arm L is pivoted at its forward end to the projection or pin *i* on the forward end of the lever H, and which projects through the link I, and the rear end of the arm L is pivoted to a lock, N, swinging upon the hammer-pivot *x'*, the upper end of the lock being in a position beneath the block E to hold it firm

when the latter is up and against the rear end of the bolt *a*, as shown clearly in Fig. I.

The hammer is of the ordinary character, and may be arranged to strike against a pin in the block E, communicating the blow to a fire-pin extending either along the bolt, as shown in dotted lines, or arranged in any convenient manner in the frame.

A projection, *s*, is made on the rear side of the trigger *g*, so that when desired the trip *t*, pivoted to the handle of the lever H, may be thrown open, as shown in Fig. II, and when the lever is brought up into the position shown in Fig. I the trip will strike against the projection *s* and release the hammer from its position at full-cock.

The lower end of the pawl *h* is held out by a spring placed inside, so that as the lever H is moved up the lower end of the pawl will strike against the shoulder *x* of the frame, as hereinafter further explained.

The operation of my invention is as follows: The parts of the gun being in the position shown in Fig. I, and the magazine C being charged with cartridges, one of the latter is thrown back by the magazine-spring into the recess C' in the carrier D. The lever H being moved downward and forward, the projection *i*, arm L, and lock N are moved back until the lock is out from beneath the block E, and during this movement the lower end of the pawl *h*, which thus far has rested upon the upper part of the shoulder *x* and served as a latch to hold the lever H up in place, is pressed in as it passes down until it has passed below the shoulder, when its spring forces the lower end out again until the upper end passes to a position beneath the lower end of the link I, as shown clearly in Fig. II. The projection *i* in the forward end of the lever H takes a bearing against the link I in the lower end of the hole *i'*, and as the long arm of the lever still moves down and forward the link and pinion *f* are moved back, which moves back the bolt *a*, the latter moving twice as fast and as far as the pinion. The lock N having at this time moved back from beneath the block E, as the bolt *a* starts back it moves quickly the block E into the position shown in Fig. II by means of the teeth *a''*. As the lock N starts to move back it impinges against the hammer K, and moves that back also, and the hammer and block E now being entirely out of the way, the bolt, as the movement of the lever H continues, is free to move back to the position shown in Fig. II. In this downward and forward movement of the lever H, when the pin *i* or the extreme forward end of the arm L reaches the shoulder *c'* on the rear end of the arm G, the forward end of the latter and the carrier with which it engages are thrown upward, bringing the recess C' and cartridge therein directly behind and in line with the bore of the barrel B, when the forward movement of the lever H is completed. In this position (shown in Fig. II) the upper end of the pawl *h* is beneath and against the lower end of the link I, and if the lever H now be moved

back, the link I, arm L, lock N, pinion *f*, and bolt *a* will be moved forward until the teeth *a''* (which extend downward a little below the lower line of the bolt) reach the teeth *e* on the block and engage with them, and the block is thereby moved up into place against the rear end of the bolt, and when that is done the bolt has reached its foremost position, and the forward end of the bolt, having moved along the length of the recess C' in the carrier, has forced the cartridge into the barrel, and remains with its forward end against the head of the cartridge. As the backward and upward movement of the lever is continued the lower end of the pawl *h* rides against the shoulder *x* of the frame, and the upper end of the pawl is thereby forced rearward or out from beneath the lower end of the link I, so that the latter and the pinion cannot be forced farther forward. As the pin *i* or forward end of the arm L reaches the shoulder *c* on the rear end of the arm G the forward end of the latter is thereby moved down, forcing down the carrier into its position to receive another cartridge, the pin *i* meanwhile moving along the elongated hole *i'* in the link, and the arm L and lock N being also drawn forward until the latter is in place beneath the block E. The hammer K being then in position of full-cock, the arm is discharged by the trigger, as usual; or, if desirable, the pivoted trip *t* in the handle of the swinging lever H may be opened out into the position shown in Fig. II, and if the handle be brought back and up against the frame the trip will strike against the projection *s* of the trigger, and thereby release the hammer, so that the arm having been placed in a desired position for the range it may be rapidly loaded and discharged automatically by the simple swinging of the lever H to and fro.

It will be perceived that as thus constructed it is impossible to let down the hammer into a position to strike the fire-pin until the bolt *a*, the block E, and the lock N are moved entirely forward into place for firing after the cartridge is fully and entirely in place in the barrel, so that no danger from premature explosion exists.

I am aware that a breech-block and a lock for securing it in place at the rear end of the barrel have heretofore been so arranged as to prevent the hammer from striking the fire-pin before the block and its lock were up in place, and thereby obviating the danger of premature explosion; and I do not claim that feature irrespective of my construction and arrangement of other mechanism connected with said lock and block.

Having thus described my invention, what I claim as new is—

1. In a fire-arm, the combination of the lever H, the spring-pawl *h*, pivoted thereto, the link I, pinion *f*, and stationary rack *f''*, as a means of moving the bolt *a* to and fro in loading the arm and ejecting the shell, substantially as described.

2. The combination, in a fire-arm, of the lever

H, with its spring-pawl *h*, and the arm L, as a means of moving the brace into and from its place beneath the block, substantially as set forth.

5 3. In a fire-arm, the combination of the bolt *a*, the block E, and the brace N, substantially as set forth.

4. In a fire-arm, the combination of the lever

H, with its spring-pawl *h*, the link I, pinion *f*, bolt *a*, the arm L, brace N, and block E, operating substantially as set forth.

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Witnesses:

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F. E. CURTIS.