(No Model.)

# A. BURGESS.

## MAGAZINE FIRE ARM.

No. 357,517. Patented Feb. 8, 1887.

Fig: 1.

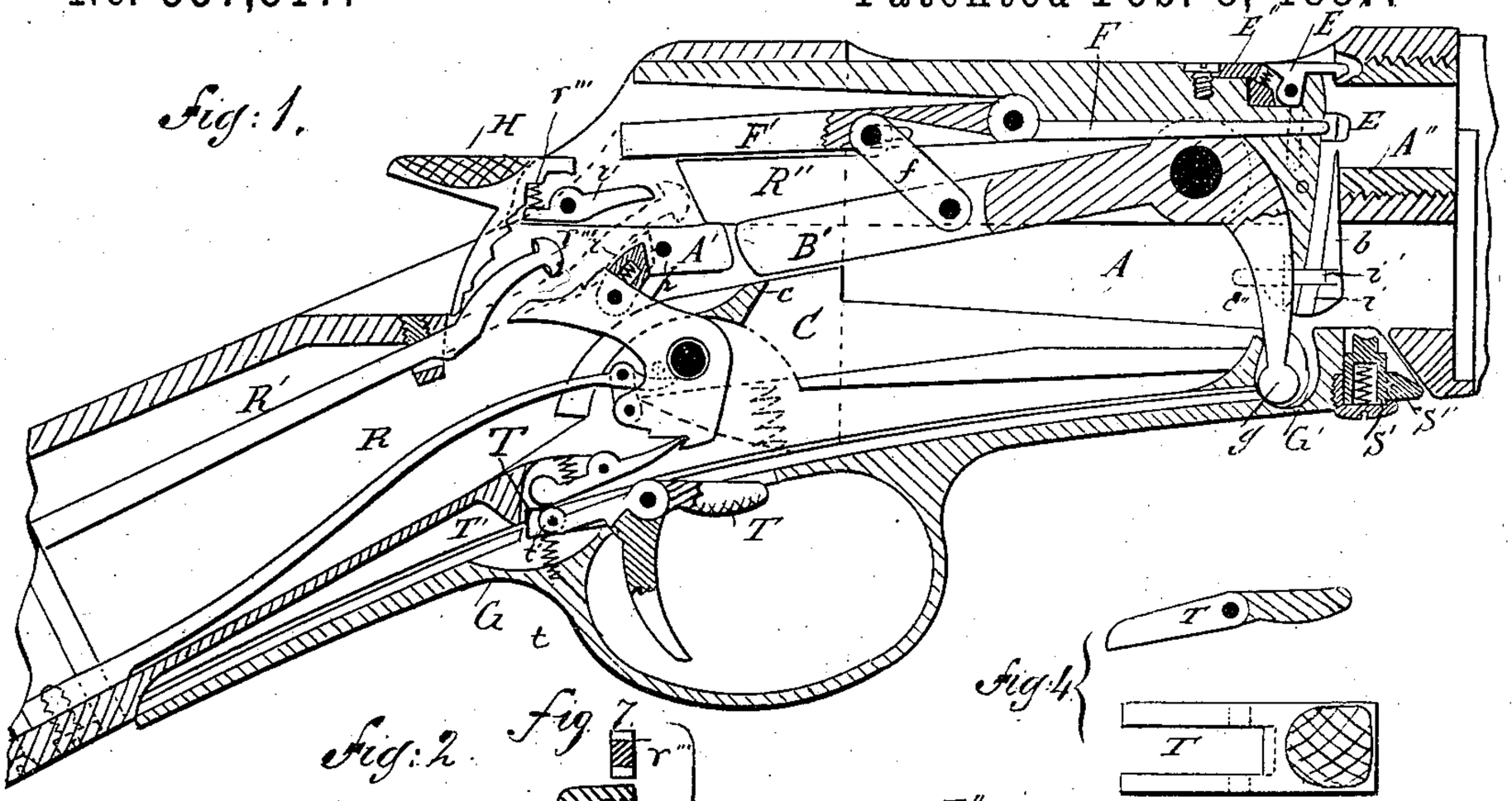



Fig: 2.

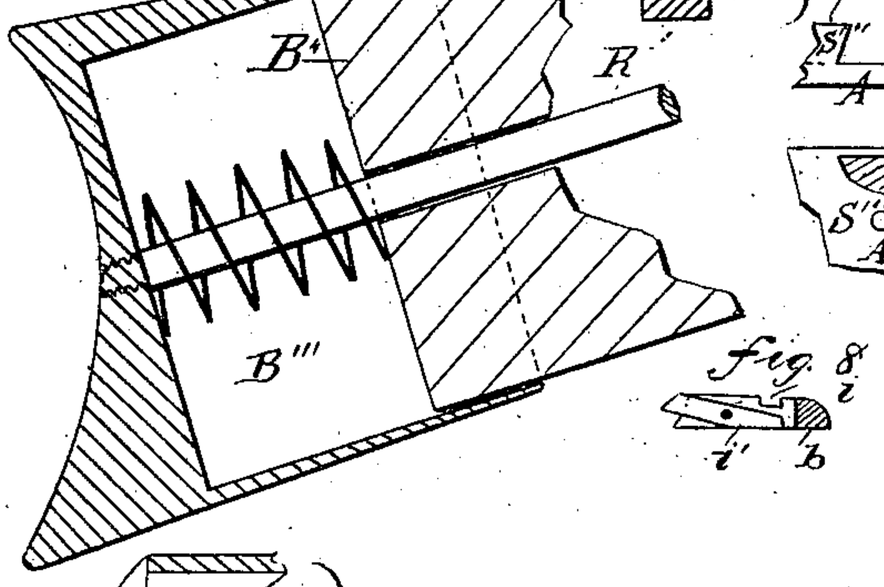
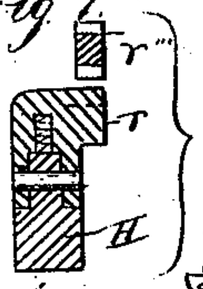



fig 7.



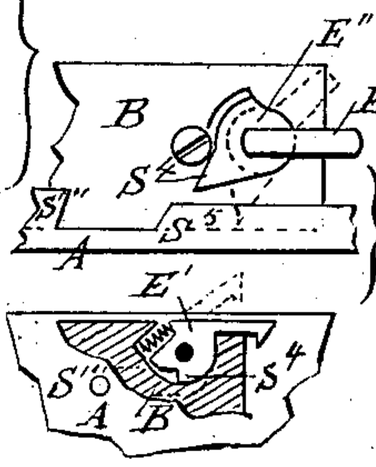




Fig: 3.

Fig: 4.




Fig: 5.

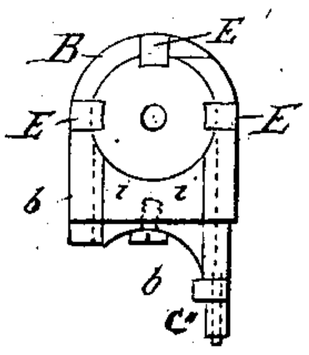



Fig. 8.



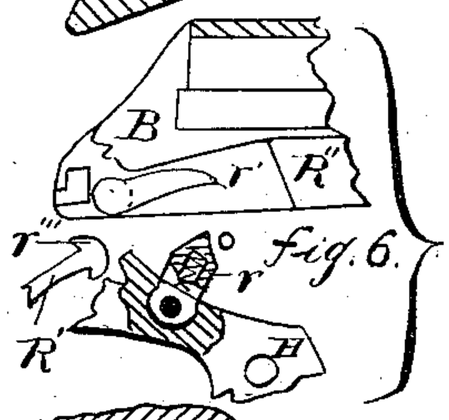




Fig. 6.


Fig. 9.

WITNESSES:

Chas. Nida.
H. A. West

INVENTOR

Andrew Burgess

# UNITED STATES PATENT OFFICE.

ANDREW BURGESS, OF OWEGO, NEW YORK.

## MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 357,517, dated February 8, 1887.

Application filed September 1, 1884. Serial No. 141,910. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW BURGESS, a citizen of the United States, residing at Owego, in the county of Tioga and State of New York, have invented certain new and useful Improvements in Magazine Fire-Arms, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to breech-loading and magazine fire-arms; and it consists in various improvements and combinations of parts, with the object of producing greater ease of manipulation, rapidity and effectiveness in such arms by details of construction and co-operation of parts hereinafter more fully set forth and described.

Figure 1 is a longitudinal horizontal view, in section, of the frame and breech mechanism of this arm; Fig. 2, a reduced sectional view of the butt as connected with rod R'. Fig. 3 shows a top or plan view of the extractor of Fig. 1 and a section of a modification of same. Fig. 4 is a bottom plan and sectional side view of the brace T. Fig. 5 is a front view of the face of the bolt and its parts. Fig. 6 shows the dog *r* in the hammer, and dog *r''* as hung in the bolt, and the head of rod R', as in Fig. 1. Fig. 7 is a cross-section through the hammer, the dog *r*, and the rod R'. Fig. 8 is a detail of foil-lever *i'*, the projection *b* being shown cut off in horizontal section. Fig. 9 is a modification of foil-lever *i'*, (in reversed position.)

Similar letters of reference indicate corresponding parts.

A is the frame of the arm, A' the locking-shoulder, B the bolt, B' the locking-brace, E the extractor, G the sliding guard, T the guard-locking brace, and R' the reciprocating rod which co-operates to move the bolt and hammer.

The bolt B is locked forward by the brace B', which turns down forward of the shoulder A', fixed in the frame. The sliding guard G, having the sectional sleeve-extension R, to be grasped by the hand of the operator, engages in its notch G' the projecting arm *g* of the pivoted brace, so that in sliding back the guard the forward wall of notch G' engages the arm *g* to turn the brace B' upward, or out of engagement with the locking-shoulder A', when the bolt is free to move back to open the breech by the continued backward movement of the sliding guard, and by the reverse or forward movement of the sliding guard the rear wall of notch G' engages the arm *g* of the brace to move the bolt forward until the breech closes so far forward that the rear of brace B may be turned downward (by the forward pressure of the sliding guard on its arm *g*) against the locking-shoulder A'.

I make the notch G' wider than the arm *g*, so the guard has a little lost motion, that it may strike a blow when required to start the breech in either direction. A brace, T, is hung in the sliding guard, with movement independent of the trigger, and may be open at its rear to pass the trigger, as shown in Fig. 4, and has a spring, *t*, to turn its rear end up forward of the abutment T' in the frame, to lock the guard in its forward position, and thereby hold the bolt and brace locked by bearing forward on the arm *g* of the brace B'.

The guard-brace projects in front of the trigger, as at T, Fig. 1, so that an upward or grasping pressure on its projecting forward end turns its rear part downward to unlock the guard and allow it to slide backward, and after the guard has thus started back and moved the brace to unlock the breech the roll *t'* (which is hung in the center of the rear of the split trigger) moves so far back that it may engage the rear incline of the abutment T', so that the pulling back on the trigger in moving back the guard pulls the roll *t'* against the incline T' in the part of the movement of the guard to start back the breech-bolt by the leverage thus applied by the trigger, and so act at the moment of starting the cartridge-shell from the chamber.

A spring-stud, S', is arranged in the forward part of the sliding guard, and has a forward projection, S'', to engage the incline, as shown in the frame, to retire the said spring-stud downward when the guard is pressed to its most forward position; but when the guard starts back to unlock the breech the stud springs up forward of the flange of the rear cartridge in the magazine, and besides moving it back as the breech opens, it raises the head of the cartridge into the slots *i i* of the projection

*b* of the bolt to insure its rising therein when acted upon by the carrier, and in closing the breech the said spring-stud stops the magazine after the carrier falls, until retired by its projection S″.

The jaws *b b* extend downward from the face of the bolt, and have grooves *i i* to receive the flange of the cartridge from the mouth of the magazine and guide the head of said cartridge upward against and forward of the face of the bolt, and when the carrier raises the cartridge its front heavy end has a tendency to fly up and out of the frame; but the guiding-notches *i i* serve to clamp the flange when it begins to turn obliquely from its vertical position, and so hold the cartridge down in position to be forced into the barrel by the closing of the bolt.

I here show, Figs. 1 and 5, one side of the extension carrying the jaws *b b* partly cut away to permit the loading of the magazine through the side of the frame, and the opposite jaw provided with the foil or lever *i'*, which is arranged in the jaw, so as to be engaged, as at *c''*, by the arm *g* of the brace when said arm is moved to its foremost position in locking the breech to press the forward end of lever *i'* outward into the notch *i* and bridge it, so that when loading the magazine the cartridge-flanges will be guided forward on said lever or foil *i'*, so as not to be obstructed by the notch *i;* but when the arm *g* moves back from the end *c''* of the foil *i'* it is free to turn out of the groove, so that said groove will guide and hold the cartridge-flange, as before described. The foil-lever *i'* may be hung in the magazine, and its rear end swing into the groove *i* in an equivalent manner by operation of the brace or bolt in closing the breech.

In Figs. 1 and 5 I show extractors E E on each side of the face of the bolt, forming a continuation of the grooves *i i* above the guiding-jaws, and also a top extractor, E′, which may be used in conjunction with the others, or alone. The top extractor, E′, as shown in section, Fig. 1, and in plan, Fig. 3, consists of a base, E″, which carries the extractor E′ and sets in a depression in the bolt, where it is held by a screw or otherwise, and may be vibrated to turn back the extractor nearly or quite even with the face of the bolt, as shown in dotted lines, Fig. 3, to allow the cartridge to be thrown laterally from the frame.

To turn back the extractor, I arrange a projection, as S‴, in the frame in the line of movement of the point $S^4$ of the extractor-base, so that at the last part of the rearward movement of the bolt the extractor is thereby turned back to disengage the cartridge-flange, and in the forward movement the point $S^4$ encounters the lower projection, $S^5$, to turn the extractor again parallel with the bolt; or, as in the modification in Fig. 3, the extractor may be turned to operative position by a spring; but I make no specific claim to the vertically-swinging extractor of the modification, as I show and claim it in my application No. 168,819, filed June 15, 1885.

The vibrating extractor described may be arranged on the side or bottom of the bolt to operate in a similar manner without essential change in the features of the invention.

I arrange a rod, R′, to reciprocate longitudinally in the stock of the gun, and preferably attach it to a telescopic butt-plate, (or to the rear of the stock when a telescopic joint is made at the small of the stock,) so that the forward part of said rod may engage the bolt or hammer, or both, to move them forward or back, as desired.

In Fig. 2 the rod R′ is provided with a spring to move it back; but a reverse motion may be obtained by a lever or any other known means, or the spring may be applied to press the rod in the opposite direction; but I prefer this or similar arrangement of the spring, by which it also acts as a buffer to ease the recoil of the gun. When the breech is nearly closed and the rod R′ is forced forward by the shoulder of the operator, or otherwise, its forward end engages the projection R″ of the bolt to force the bolt home, the rod moving forward to the position shown in dotted lines, Fig. 1, when by releasing the rod R′ from the force that pressed it forward—as removing it from the shoulder—the upper projection on the head of the rod engages the dog *r'*, which is pivoted in the bolt, so that when the bolt is unlocked the rod, pulling back by means of its spring-butt, or otherwise, tends to move back or assist any other means used to move back and open the breech, and the bolt will become disengaged from the rod by the falling of said rod below the bolt in moving rearward, as to position shown in Fig. 1. I also show a lower projection on the head *r‴* of rod R′, arranged to engage the hammer to cock it in the backward movement of said rod by pulling back on the dog *r*. The dog *r* is arranged to swing in the forward part of the hammer and is provided with a spring to hold it normally in a central position, and a projection, as *p*, in the frame stops the dog *r* to turn it up, as shown in dotted lines, when the hammer reaches its foremost position, so the rod R′ may engage it and pull it back until it cocks the hammer, when its line of movement will fall so far below the line of movement of the rod as to disengage it therefrom.

I here show the forward end of rod R′, in Figs. 1 and 7, in position to project forward at one side of the hammer; but it may pass forward through a mortise in said hammer (or be split to pass both sides of it) to engage the dog *r*, so it may pull back on said dog *r* to cock the hammer, which at that point turns the dog out of engagement with the rod R′, as described.

The engagement of a butt-piece through the rod R′ with the bolt to close it may be direct against a shoulder of the bolt, as here shown, or by a lever-connection, or by any known

means, and the operation of said rod on the bolt is facilitated by being applied to a gun in which the operating-lever, as in ordinary lever-bolt guns, is pulled toward the shoulder to close the breech, or, as in some of my former patents and applications, where a handle or slide is moved backward to move the breech forward, thus bringing the opposing forces to bear upon the bolt in the same direction and forcing the breech-block forward in the frame, not only by the force of the hand upon the lever or handle, but also by the resistance against that force which, as the shoulder against the butt of the gun, in this case, holds the gun in position. This gives greatly increased force on the closing-bolt where it is most needed to force the cartridge home and to force the extractor-hooks over the cartridge-flange.

The rod R′ may be operated by the hand, or otherwise than by the butt-plate, and may engage the bolt or hammer by a lever or similar device, without changing the nature of the invention; or a slide underneath may take the place of the sliding guard.

In Fig. 1 I show a link hung to the brace, which engages a jointed firing-pin to withdraw it and to hold said firing-pin out of the line of movement of the hammer when the brace is unlocked. One end of the link *f* is pivoted in the brace B′, and the other in a slot in the rear part, F′, of the jointed firing-pin F. The turning upward of the brace to unlock the breech turns up the rear part of the firing-pin by the link *f*, and by forcing the upper part of the link *f* obliquely backward, which forces the firing-pin backward in the bolt, and when the brace is turned down to its locked position, the slotted connection of the link with the firing-pin allows said pin the necessary movement forward.

The brace T may be omitted, or the trigger made in one piece therewith; or the trigger will lock the guard forward when pulled by its rear arm, turning up forward of the shoulder T′; but I do not herein claim such construction, as I claim it in my application No. 145,558, filed October 15, 1884.

The laterally-swinging extractor claimed herein is shown, but not specifically claimed, in my application No. 140,499, filed September 30, 1884.

I do not herein claim the peculiar arrangement of sear described and claimed in my application filed July 15, 1884, to which case the Patent Office has given the Serial No. 137,812.

I claim—

1. In a breech-loading fire-arm, a breech-piece which is moved to open and close the breech, and a sliding guard which serves as a handle to lock and move the breech-piece, and means, substantially as described, to connect the guard and breech-piece, in combination with a lever pivoted in said sliding guard, and a fixed abutment in the body of the gun to receive engagement of said lever to lock the guard and bolt in firing position, and a projection of said lever in position for engagement outside the frame.

2. In a breech-loading fire-arm, a sliding guard arranged to operate the bolt by connecting therewith, in combination with a lever pivoted in said guard, and a fulcrum, as T′, in the body of the gun, an arm, as *f*′, on the lever to engage said fulcrum, and a projecting arm or handle on said lever by which to operate it to start open the breech, substantially as specified.

3. In a breech-loading fire-arm, a sliding handle guided longitudinally on the body of the gun, and breech mechanism arranged to be unlocked by the beginning of the movement of said handle, in combination with an abutment fixed in the body of the gun, and a lever hung in the sliding handle out of engaging position when the breech is locked, but carried by the handle to position to engage said abutment by the movement of the handle when unlocking the breech, substantially as described.

4. A slide arranged to operate the breech of a gun by connections, substantially as described, and a spring-piece, as S′, which is carried thereby to the delivery-opening of the magazine and arranged to spring up to stop the magazine when the said slide is moved back, in combination with an incline in the frame with which the said spring-piece is thrust into engagement to lower it and open the magazine in the forward movement of the slide.

5. In a magazine-gun, a reciprocating bolt provided with the grooves *i i*, and a sliding guard arranged to operate the bolt, in combination with a spring-piece, as S′, which is carried by the sliding guard and arranged to engage a cartridge-head in the mouth of the magazine and raise its flange into the grooves in the face of the bolt, substantially as specified.

6. In a magazine fire-arm, a longitudinally-reciprocating bolt provided at its forward end with a downward extension and having the grooves *i i*, rising to guide the cartridge-flange upward before the face of the bolt, a magazine located forward of said bolt and under the barrel, in combination, so that one groove extends downward opposite the magazine, and the other side of the extension *b* is cut away at its bottom, substantially as specified.

7. In a magazine fire-arm, a longitudinally-reciprocating bolt provided at its forward end with a projection having grooves rising to the face of the bolt to guide the cartridge-flange upward before the face of the bolt, in combination with a foil or lever arranged to bridge one of said grooves of the bolt when said bolt is thrust to its closed position, the act of closing the breech mechanism projecting the foil into said groove, substantially as and for the purpose specified.

8. In a breech-loading fire-arm, a rod, as R′, having movement independent of the breech-piece, and having a part extending rearward

of the breech mechanism, and a suitable projection from the stock by which it may be engaged to move it forward or back to operate upon the breech mechanism, in combination with the breech-piece and a sliding guard to operate by suitable connection upon the breech mechanism in conjunction with said rearward-extending rod, and mechanism for engaging the breech-block and rod, substantially as specified.

9. In a gun, the combination, with the stock and hammer, of a rod normally free at its front end, but having means for engaging directly with the hammer, said rod extending to the butt of the stock, so as to be moved in one direction by pressure on the butt, and having a spring to force it in the other direction, substantially as described.

10. A rear butt-piece or stock, the rod R′, attached thereto, with free forward end when in normal position, and adapted to be forced forward to engage the breech mechanism by the pressure of the shoulder of the operator, and a laterally-operating spring to produce such engagement, in combination with a spring which presses rearward and retires said butt-piece to move back the rod R′, and thereby open or assist to open the breech, substantially as described.

11. The combination of a hammer, a jointed firing-pin carried by a reciprocating bolt, a link, and a locking-brace connected to the firing-pin by said link, whereby the rear of the firing-pin is held out of the path of the striking-face of the hammer by the brace and link when the breech is unlocked, substantially as specified.

12. In combination, in a breech-loading firearm, a reciprocating bolt, an extractor hung therein, and means to swing it forward into position to reach downward to engage the shell forward of the face of the bolt when the breech is closed, and means, substantially as described, to rotate the said extractor laterally backward to release the shell when the breech is open.

13. In the frame of a breech-loading firearm, a bolt arranged to move back and forth to open and close the breech, in combination with an extractor which reaches forward of the face of the bolt, and a stop to engage the said extractor in the latter part of the opening movement of the bolt to vibrate it backward to or near the face of the bolt, to thereby release the shell and allow it to be ejected laterally through an opening in the frame.

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

ANDREW BURGESS.

Witnesses:
THOMAS F. BRADY,
C. M. BROOKS.