(No Model.)

# A. BURGESS.

## MAGAZINE FIRE ARM.

No. 458,333. Patented Aug. 25, 1891.

Fig. 1.

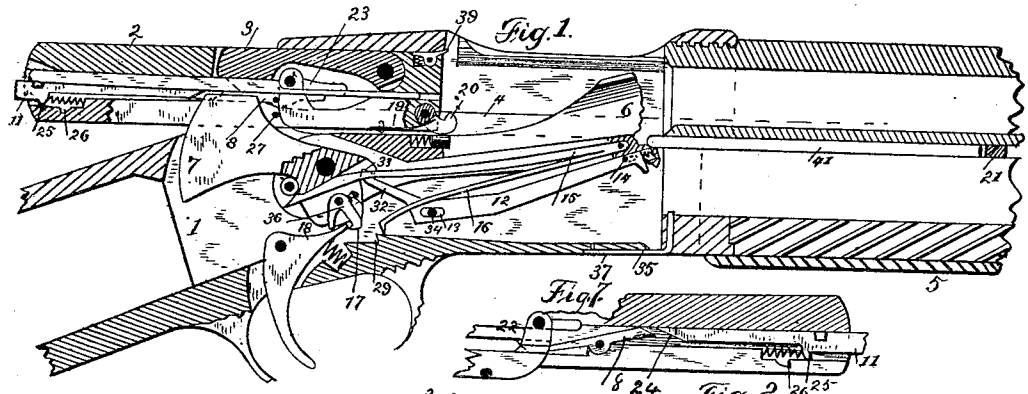


Fig. 4.

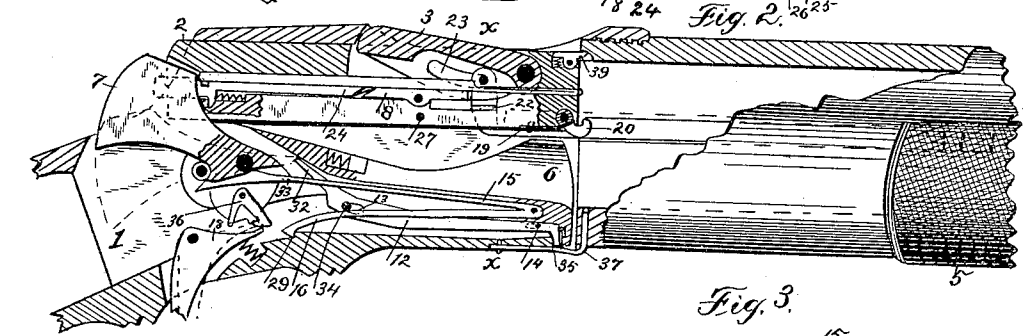


Fig. 2.



Fig. 3.

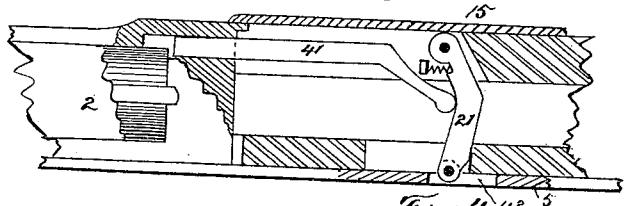


Fig. 6.

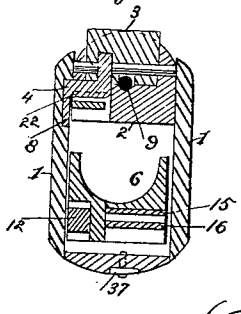
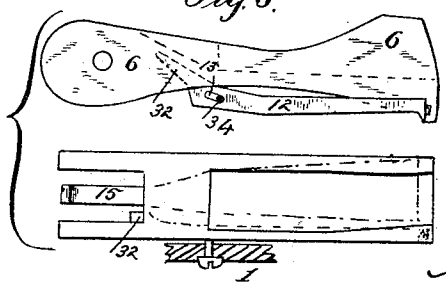


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 458,333, dated August 25, 1891.

Application filed January 12, 1887. Serial No. 224,139. (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; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to breech-loading and magazine fire-arms; and it consists of various arrangements and combination of parts, having for their object more perfect and easy operation and simplicity of construction.

Figure 1 is a longitudinal elevation in section of this arm with the breech open. Fig. 2 is a view similar to Fig. 1, but with the breech closed. Fig. 3 is a horizontal section showing the forward end of the bolt, the starting-lever, and connections. Fig. 4 shows a modification of the starting device of Fig. 3. Fig. 5 is a detached plan and elevation of carrier, showing its cocking-lever. Fig. 6 is a cross-section on the line $x\ x$ of Fig. 2. Fig. 7 shows a detail of the bolt and unlocking device.

Similar figures of reference indicate corresponding parts.

1 is the frame; 2, the bolt; 3, the locking-brace; 4, the connecting-rod; 5, the operating-handle, and 6 the carrier.

7 is the hammer; 8, the dog that locks the operative mechanism; 9, the firing-pin; 24, an incline on the firing-pin to unlock the sliding handle by the striking of the hammer; 11, a projecting foil to throw and hold the dog 8 out of operation.

12 is a cocking-lever with a slot 13 in its middle portion, through which it is pivoted in the frame, and 14 is its pin in slotted engagement with the front part of the carrier.

15 is the mainspring hung in the carrier and having an arm 16 to hold the carrier down and raise it.

17 is a fly-piece pivoted in the hammer to swing over the nose of the sear 18 and hold it when the hammer is at half-cock.

19 is the spring that bears on the ejector and extractor 20 to vibrate it to the position shown in Fig. 2 from either direction, and 21 is the starting-lever, which projects between the barrel-bore and magazine to be engaged by the sliding handle.

This gun is constructed with a reciprocating bolt, and a brace pivoted in the front of the bolt is arranged to lock the bolt forward by swinging up forward of an abutment at the top of the frame. A cross-pin engages by oblique bearing the bolt and brace, so that the reciprocation of a connecting-rod which carries said cross-pin and is moved by a sliding handle turns the rear end of the locking-brace down into the bolt by the rearward movement of the cross-pin to unlock by means of the cross-pin aforesaid and to allow it to then move back the bolt to open the breech. The dog or pawl 8 is hung in the bolt and has a spring to throw its forward end into engagement with shoulder 22 on the connecting-rod when the breech is closed, as shown in Fig. 7. This prevents the longitudinal movement of the connecting-rod in the bolt, so it cannot move to traverse the oblique slot 23 of the locking-brace to unlock it, and thus has the effect to hold the breech and handle in locking position; but the projection 24, which is carried by a reciprocating piece, as the firing-pin or foil 11, which is propelled forward in the bolt by the falling hammer, vibrates the dog 8 to unlock the connecting-rod. The foil 11 projects rearward at the side of the bolt, so that it may be there engaged to press it forward and downward to lock its hook 25 into the notch 26 in the bolt, to thereby hold said foil in its forward position and constantly press the locking-pawl out of engaging position and thus render it inoperative, so that the connecting-rod will not be locked in closing; but the foil 11 may be readily released from its notch by raising it, when its spring will retire it from contact with the pawl 8.

In Fig. 7 the foil 11 and incline 24 are shown integral with the firing-pin. The vibrating carrier is hung on the same axis with the hammer and the mainspring is housed in the carrier, so the carrier and hammer swing freely together when the hammer vibrates back to half-cock, and the carrier rises,

as from the position shown in Fig. 2 to that in Fig. 1. A projection, as 27, in the bolt turns back the hammer, as aforesaid, in the last part of the opening movement by the assistance of the spring 16, which is here shown as the lower leaf of the mainspring 15 and the spring 16 has a projection to enter the notch 29 in the frame when the carrier is in its down position to hold it there. The main spring engages a projection on the hammer rearward of its pivot and has a depression or downward incline just forward of its rear end to allow the said projection to move therein, so that the spring may act less forcibly to vibrate the hammer as it approaches full-cock. A cocking-lever 12 is pivoted in the frame by a slot and pin, and its rear end forms a dog 32 to engage the hammer. The forward end is carried by the front end of the carrier, which has a spring to press the said lever back, as in Fig. 2, to force its dog 32 into the notch 33 of the hammer, so that when the carrier is forced down by the closing-bolt or connecting-rod, the lever being vibrated thereby on its fulcrum 34 in the frame, obtains the position shown in Fig. 2, and the hammer is thereby thrown to the position there shown in dotted lines, when the lever, not following the rotation of the hammer, disengages to allow the hammer to fall and fire the gun, (if the trigger has been held back, so that its sear-point shall not hold back the hammer;) but if the sear be allowed to engage the hammer it will be held thereby at full-cock, as in position shown in dotted lines, Fig. 2, when it may be disengaged by pulling the trigger in the usual manner. A shoulder 35 is fixed in the bottom of the frame, and an inclined projection on the front of the lever is arranged to come in contact therewith when forced down by the carrier to insure the disengagement of the lever from the hammer at the proper time. A hook 36 is pivoted in the hammer with means to vibrate it rearward, to there overhang the half-cock notch and hold the nose of the sear therein. This construction dispenses with the usual fixed in-cut half-cock notch, to engage which the hammer must be carried beyond the position in which said notch will hold it; but with the swinging fly-hook now shown the notch is not in-cut, as said hook when turned over the nose of the sear holds it firmly in position. The spring magazine-stop 37 consists of a bent spring with its rear end fixed to the bottom of the frame and its front end turned up through a hole into the bore of the magazine, the upright front end of the spring being supported by the walls of the hole to give it strength, and its horizontal forward portion entering the mortise of the frame in position to be engaged by the falling front of the carrier, which retires the upright point from the magazine. The ejector and extractor have cams each side of the extractor-pivot, and a spring presses it to bear on said cams to support the said combined extractor and ejector in a middle position, as shown in Fig. 2, so that said spring will turn the extractor up to grasp the cartridge-flange, (after being turned down to position for engaging it,) and when the carrier shall strike up the extractor (to eject the shell) to the position shown in Fig. 1 the spring 19 will lower the extractor, so that it shall not obstruct the face of the bolt. A stud above the extractor is pressed down and in front of the top of the bolt to hold the cartridge onto the extractor; but when the cartridge-flange is forced violently up against said stud 39 by the extractor and carrier its spring yields to allow the cartridge to be expelled sidewise or by a glancing forward and sidewise movement. A starting-lever 21 and its rod connection 41 are arranged in front of the bolt, the lever 21 being pivoted in one side of the gun and passing between the bore of the barrel and magazine. Its other end is pressed by a spring to enter a mortise in the sliding handle, as shown in Fig. 3. The lever 21 abuts against the front end of rod 41, whose rear end abuts against the face of the bolt.

In operation the sliding handle moves to unlock the breech (this "lost motion" being permitted by the length of slot 42) when the lever is engaged by a wall of the slot to turn the lever until it thereby becomes disengaged from the handle; but in turning it forces the rod 41 against the face of the bolt to start it back. The rebound of the hammer is here produced by stopping the action of the mainspring against the hammer-pivot, and the bearing of the sear against the inclined end of the hook in the hammer, as shown in Fig. 2, which cams back the hammer (when the force of the mainspring is stopped) to the half-cock position of Fig. 1.

Fig. 4 shows as a modification a reversal of the arrangement of the starting-lever to operate by the reverse movement of the sliding handle. It is obvious that the locking-dog 8 may swing in the direction most convenient to engage any attachment of the sliding handle, according to the construction of the parts, and the foil-piece 11 may act to release said dog in any equivalent manner.

I do not herein claim, broadly, the combination of the hammer and carrier arranged on one pivot and having an intermediate mainspring. Such construction is shown in my application, Serial No. 131,735, of May 16, 1884, and the combination is therein more broadly claimed.

I claim—

1. In a breech-loading fire-arm, a sliding handle, a connecting-rod, and a breech-piece and locking-brace arranged to be operated thereby, in combination with a dog or pawl hung in the breech-piece to engage the connecting-rod to prevent its movement and lock the handle, substantially as specified.

2. In a breech-loading fire-arm, an operating-handle, a connecting-rod extending therefrom into engagement with a locking-brace,

and a reciprocating bolt to lock, unlock, and move the brace, in combination with a dog carried by the bolt and arranged for engagement with the connecting-rod and bolt to prevent the unlocking movement, and a foil-piece 11 to disengage said dog, substantially as described.

3. In a breech-loading fire-arm, an operating-handle, a connecting-rod extending therefrom into engagement with a locking-brace, and a reciprocating bolt, said handle, connecting-rod, and brace being arranged to lock, unlock, and move the bolt, in combination with a dog carried by the bolt and arranged for engagement with the connecting-rod and bolt to prevent the unlocking movement, and a foil-piece to disengage said dog and mechanism, substantially as described, to hold the dog out of engagement.

4. In a magazine fire-arm, a vibrating carrier and a cocking-lever in engagement with said carrier and fulcrumed in the frame, in combination with a vibrating hammer, and an abutment thereon for the engagement of said lever, and a breech-piece whose closing movement forces down the carrier to cock the hammer, substantially as specified.

5. In a magazine fire-arm, a vibrating carrier and a cocking-lever in engagement with said carrier and fulcrumed in the frame, in combination with a hammer and an abutment thereon for the engagement of the said lever, a breech-piece whose closing movement forces down the carrier to cock the hammer, and a shoulder in the path of movement of the lever 12, substantially as described, for releasing the lever from the hammer when the breech is closed.

6. In a breech-loading fire-arm, a hammer provided with a propelling-spring and means to rebound said hammer to the half-cock position, in combination with a sear to hold said hammer at half-cock and a movable hook which confines the nose of the sear by engagement therewith and with the hammer to secure said hammer in its half-cocked position, substantially as and for the purpose specified.

7. In a breech-loading fire-arm, a hammer arranged to rebound to half-cock, substantially as specified, and having no fixed incut half-cock notch, in combination with a sear provided with a point arranged to hold the hammer at its full rebound and a movable hook in the hammer to engage the point of the sear and hold it and thereby confine the hammer at half-cock.

8. In a magazine fire-arm, a carrier hung to vibrate in the mortise of the frame, a longitudinal magazine under the barrel arranged to deliver cartridges to the carrier in the mortise in the frame, and a magazine-stop consisting of a horizontal spring with upright front end, its rear horizontal end being attached to the bottom of the frame and its forward upright end supported by the walls of a vertical hole and extended upward into the bore of the magazine, in combination with the vibrating carrier and means to force its front end down to strike the forward part of the horizontal arm of the spring-stop to retire its upright end from the magazine, substantially as described.

9. In a magazine-gun, the reciprocating bolt, the longitudinally-reciprocating handle, and a rod connecting the handle to the bolt and having a cross-pin which engages and reciprocates the bolt, a locking-piece carried by the bolt, the firing-pin extending lengthwise of the bolt having operative engagement with said locking-piece, and a spring bearing on said firing-pin to retract it and lock the locking-piece and handle, all in combination, substantially as described.

10. In a breech-loading fire-arm, a reciprocating breech-bolt, a sliding handle, and connections to operate the breech-bolt by the movement of the handle, in combination with a starting-lever having intermediate connection with the bolt and pivoted in the body of the gun, being connected with the sliding handle, so that the movement of the handle to open the breech turns the lever to start back the bolt, substantially as specified.

11. In a breech-loading fire-arm, a sliding handle located forward of the frame and having connection with the breech-piece to operate it, in combination with a starting-lever pivoted in the body of the gun and engaged by the sliding handle to start the breech open by means of an intermediate connection, substantially as described, and a spring to return the lever into engagement with the handle.

12. In a magazine-gun, the combination of the breech-closing mechanism and a carrier actuated thereby during the breech-closing movement, a pivoted hammer, and a lever connected to the carrier and bearing on the hammer, substantially as described, whereby the hammer is pressed back by the carrier movement during the closing of the breech.

13. In a magazine-gun, the breech-closing mechanism and a carrier actuated thereby during the breech-closing movement and a pivoted hammer, said hammer and carrier being hung on the same pivot, and a lever hung in the frame and engaging the hammer and carrier, all in combination, substantially as described, so that the closing of the breech mechanism raises the hammer.

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

ANDREW BURGESS.

Witnesses:
PHILIP MAURO,
W. A. BARTLETT.