

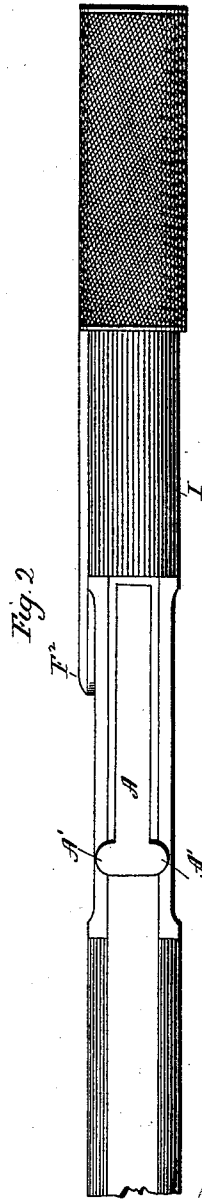
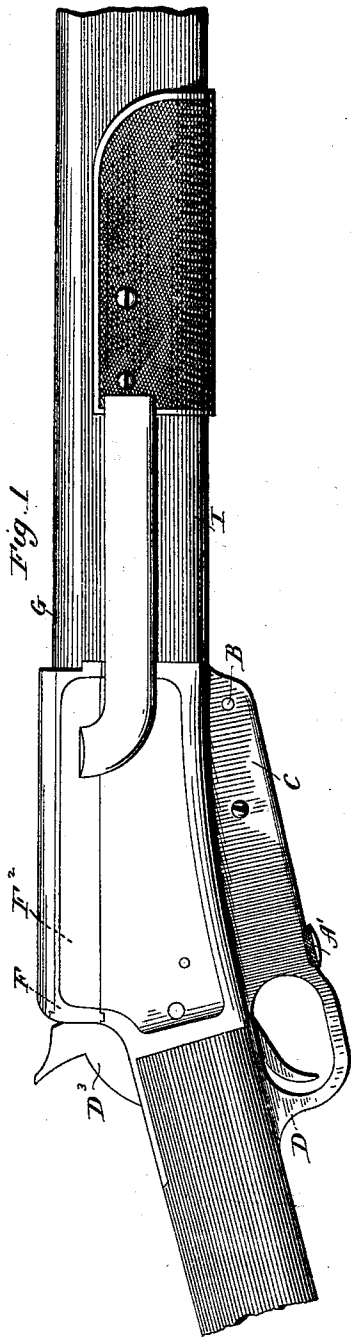
(No Model.)

4 Sheets—Sheet 1.

J. M. BROWNING.
BOX MAGAZINE BOLT GUN.

No. 545,672.

Patented Sept. 3, 1895.



Witnesses.
J. H. Sherman
Lillian D. Kellogg

John M. Browning
Inventor.
By Atty. Earle Seymour

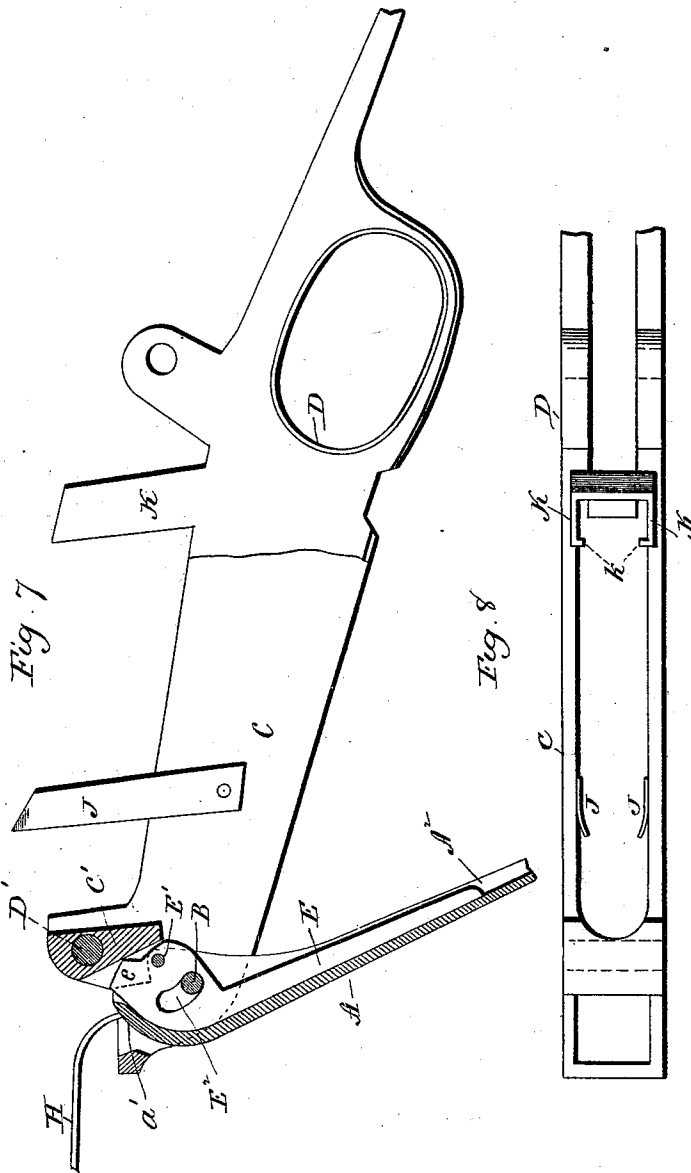
(No Model.)

4 Sheets—Sheet 3.

J. M. BROWNING.
BOX MAGAZINE BOLT GUN.

No. 545,672.

Patented Sept. 3, 1895.



Witnesses.
J. H. Thompson
Lillian D. Kellogg

John M. Browning
Inventor.
By Atty. Earle Kezner

(No Model.)

4 Sheets—Sheet 4.

J. M. BROWNING.
BOX MAGAZINE BOLT GUN.

No. 545,672.

Patented Sept. 3, 1895.

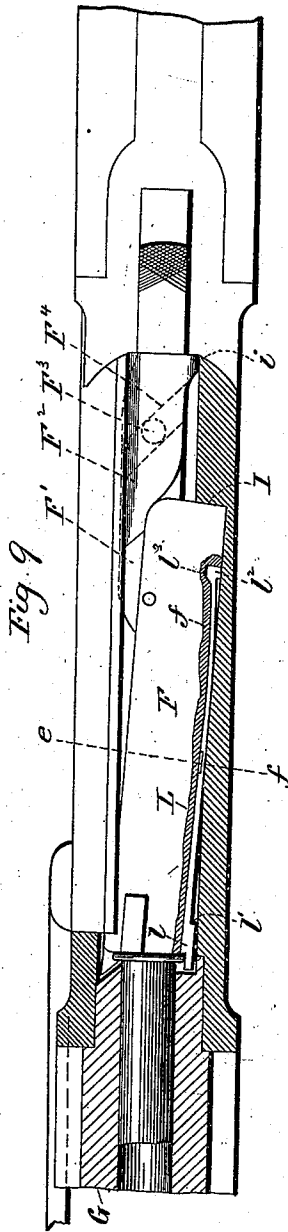


Fig. 9

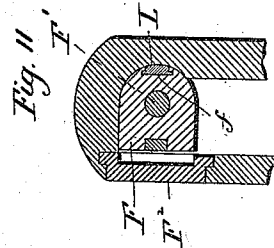
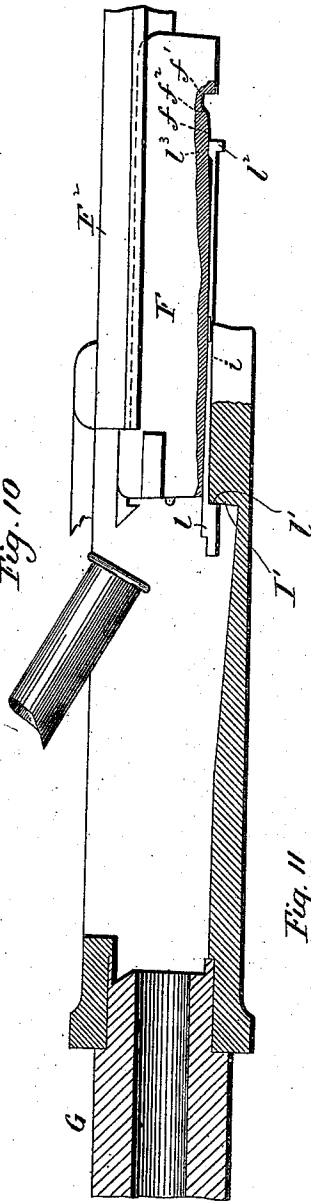


Fig. 11

Witnesses
J. M. Browning
Lillian D. Kellogg

John M. Browning
Inventor
By atty. Earl W. Keegan

UNITED STATES PATENT OFFICE.

JOHN M. BROWNING, OF OGDEN, UTAH TERRITORY, ASSIGNOR TO
THE WINCHESTER REPEATING ARMS COMPANY, OF NEW HAVEN,
CONNECTICUT.

BOX-MAGAZINE BOLT-GUN.

SPECIFICATION forming part of Letters Patent No. 545,672, dated September 3, 1895.

Application filed April 29, 1895. Serial No. 547,520. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. BROWNING, of Ogden, in the county of Weber and Territory of Utah, have invented a new Improvement
5 in Breech-Loading Box-Magazine Guns; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description
10 of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a broken view in side elevation of one form which a gun constructed in accordance with my invention may assume; Fig. 2,
15 a reverse plan view thereof; Fig. 3, a view drawn to a larger scale and showing the gun partly in elevation and partly in vertical longitudinal central section, the plate or cover being in its closed position and the carrier in its elevated position; Fig. 4, a detached plan
20 view of the cover and carrier; Fig. 5, a detached view of the cover or plate in side elevation; Fig. 6, a corresponding view of the carrier; Fig. 7, a detached view in side elevation of the lower tang of the gun, including the box-magazine and the pivotal cover and carrier thereof, the same being shown in their open positions; Fig. 8, a broken plan
30 view of the tang and box-magazine, from which latter the carrier and cover have been removed; Fig. 9, a broken view, partly in horizontal section and partly in plan, showing the breech-bolt in its locked position and designed with particular reference to illustrating my improved ejector; Fig. 10, a similar but less comprehensive view showing the breech-bolt in its open position and the ejector as shot forward for the ejection of a cartridge; Fig. 11, a view in transverse section
40 on the line *ef* of Fig. 9.

My invention relates to an improvement in breech-loading box-magazine firearms, the object being to produce a simple, compact,
45 strong, highly effective, and safe gun, containing comparatively few parts and constructed with particular reference to provision for charging the box-magazine with cartridges from the bottom of the frame of the

arm while the breech-bolt is in its closed position, so that the arm may be charged without operating its action mechanism or disturbing the cartridge in the gun-barrel, if one is there.

With these ends in view my invention consists in a cover or plate, pivoted at its forward end and closing the bottom of the magazine, a carrier pivotally connected at its forward end with the said cover or plate, and one or more springs for operating the cover
50 or plate and carrier.

My invention further consists in an ejector, provided at its extreme rear end with an inwardly-extending lifting-shoulder and an outwardly-projecting retracting-shoulder and
60 at its forward end with an outwardly-projecting operating-shoulder and with an inwardly-projecting ejecting-shoulder, located in advance of the said operating-shoulder.

My invention further consists in a safety-lock mounted in the frame of the arm, adapted to engage with the slide when the same is in its closed position and lock it therein, and also adapted to be engaged by the hammer, which depresses the lock to release the slide just before the hammer reaches
75 its down position.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and
80 pointed out in the claims.

In carrying out my invention I employ a long narrow cover or plate A, constructed at its rear end with lateral extensions or lugs A'A', adapting it to be readily grasped for
85 manual operation and pivotally hung at its forward end upon a transverse horizontal pin B, the ends of which extend into the opposite walls of the forward portion of the box-magazine C, which, as shown, is formed
90 integral with the lower tang D of the arm and secured in place by means of screws D' and D², the latter forming also the fulcrum of the hammer D³. The lower portion or bottom of the box-magazine is made open
95 and the said cover or plate A fits into it, as shown in Fig. 2. The lugs A'A' before mentioned serve as finger-pieces for grasping the

plate to open it, and may also serve as stops for stopping the plate in right position in closing. The forward or pivoted end of the cover or plate is somewhat thickened, and the plate is
 5 constructed upon its inner face with a central longitudinal groove A^2 , which receives a pivotal carrier E, the function of which is to lift the cartridges in the box-magazine into position to be engaged by the breech-bolt F
 10 and thereby introduced into the cartridge-chamber formed in the rear end of the gun-barrel G. The said carrier is enlarged at its forward end and pivotally hung on a horizontal pin E' , the ends of which extend into
 15 the inner edges of the forward end of the cover or plate A, and which may be said to be eccentric in position to the position of the pin B, on which the said cover or plate is suspended.

20 A segmental clearance-slot E^2 , formed in the enlarged forward end of the carrier, receives the pin B, as shown in Fig. 2, the lower end of this slot forming a stop limiting the elevation of the carrier. The extreme forward end of
 25 the plate A is constructed with a shoulder a , while the extreme forward end of the carrier E is constructed with a shoulder e , the said shoulders a and e being simultaneously engaged, when the cover or plate A is in its closed
 30 position, by a spring H, located in a spring-chamber H' , formed in the frame I of the arm at a point under the rear end of the gun-barrel G, the forward end of the spring being secured in place by means of a screw H^2 , as shown
 35 in Fig. 3. When the cover or plate is in its closed position, as seen in Fig. 3, the spring H engages with the shoulder e of the carrier E and exerts a constant effort to lift the carrier, and hence the cartridges in the box-magazine
 40 C. At the same time the spring acts, either through the carrier or directly on the shoulder a of the plate, to hold the same in its closed position, for it is to be observed that the engagement of the spring with the carrier and
 45 plate is at a point forward of the pin B, on which the plate or cover is hung. When the cover or plate is in its closed or normal position, the spring H thus performs the twofold function of holding the plate or cover closed
 50 and of lifting the carrier. When, however, the cover or plate is thrown down into its open position, as shown in Fig. 7, the spring rides off over the shoulder e of the carrier and off the shoulder a of the cover or plate, so that it
 55 ceases to have any direct action upon the cover; but as the plate is swung around the spring is virtually transferred from its shoulder a to its cam-surface a' , which is located below the said shoulder, but above the pin B, whereby
 60 the spring gets such a purchase on the plate or cover as to exert an effort to hold it in its open position. As the cover is being thrown into its open position, the cam-face e' of the carrier engages with the transverse tie C' , located
 65 at the forward end of the box-magazine, in such a manner that the carrier will be

thrown down into the groove A^2 of the plate or cover and maintained therein out of the way while the said plate or cover is open. With the plate or cover thus held out of the
 70 way the box-magazine may be charged from its bottom with no more obstruction from the cover or carrier than if the same had been entirely removed from the gun.

The box-magazine shown and described is
 75 formed, as before stated, integral with the lower tang of the arm, and is to be distinguished from that class of box-magazines which are made of sheet metal and inserted into a chamber formed in the frame of the
 80 arm. It is provided toward its forward portion with two upwardly-extending spring-fingers J, which engage with the ball portions of the cartridges and prevent the same from being deflected sidewise as they are being fed
 85 upward, and in fact retard their upward movement until they are brought into position to engage with a lifting-cam J' , formed in the frame, as clearly shown in Fig. 3, the said
 90 cam lifting them into position to be introduced into the chamber of the gun-barrel when their heads are engaged by the breech-bolt in the forward movement thereof. At its rear end the magazine is furnished with
 95 a forwardly-inclined box-like guideway K, adapted to receive the heads of the cartridges and also preventing the cartridges from being displaced while they are being fed upward, the forward edges of the said guideway
 100 being turned inward at a right angle to form retaining-flanges k k .

I will next describe my improved ejector L, which is located in a longitudinal groove f , Fig. 11, formed in the left-hand side of the breech-bolt F, and constructed at its forward end
 105 and upon its inner face with an ejecting-shoulder l , which engages with the heads of the cartridges for the ejection of the same, and upon its outer face with an operating-shoulder l' , which is located to the rear of the shoulder l , and which engages with the extreme inner corner of the abutment face I' , as shown
 110 in Fig. 10, for arresting the rearward movement of the ejector with the breech-bolt F, and therefore bringing the shoulder l into play for ejecting the cartridge, as indicated in that figure. In this connection I may say
 115 that it will be understood that shortly before the breech-bolt reaches its fully-open position the ejector is virtually shot forward suddenly and its shoulder l impinged against the head
 120 of the cartridge in such a manner as to cause the same to be projected from the arm. I may here explain, also, that the abutment-face I' is formed in the frame for locking the
 125 breech-bolt in its closed position, for which purpose the bolt is swung laterally from left to right through the medium of the firing-pin F' and the breech-bolt slide F^2 , which are
 130 connected for the purpose by means of a pin F^3 , carried by the firing-pin and entering inclined grooves F^4 , formed in the said breech-

bolt slide, which is located at one side of and in the same horizontal plane with the breech-bolt and connected with an action-bar F^3 , extending rearwardly from a sliding supporting-handle F^4 , located forward of the action mechanism of the arm.

I do not now enter into any detailed description of the construction just referred to, inasmuch as it forms no part of my present invention. The said ejector L is longitudinally bowed, so that its rear end has a constant tendency to spring inward, and is constructed at its extreme rear end with a retracting-shoulder l^2 and with a lifting-shoulder l^3 , respectively extending outward and inward. The extreme rear end of the groove f , Fig. 10, in the breech-bolt is recessed, as at f' , for the reception of the lifting-shoulder l^3 of the ejector and constructed with a bevel face f^2 , located at the forward end of the recess, for coaction with the said lifting-shoulder l^3 , just referred to. In the normal position (shown in Fig. 9) of the ejector the lifting-shoulder l^3 is located in the recess f' in the breech-bolt. When, however, the breech-bolt is drawn back, and just before it reaches the limit of its rearward movement, its operating-shoulder l' engages with the abutment-face I' , as shown in Fig. 10, causing the arrest of the ejector and the ejection of the cartridge, the breech-bolt continuing to move rearward for a short distance. The said movement of the breech-bolt, after the ejector has been stopped, as shown in Fig. 10, causes the lifting-shoulder l^3 , at the rear end of the ejector, to ride up out of the recess f' and over the bevel f^2 , whereby the rear end of the ejector is sprung outward, as shown in Fig. 10, so as to bring its retracting-shoulder l^2 into position to engage with the frame of the gun at the point i , Figs. 9 and 10, during the closing movement of the breech-bolt. When the said engagement takes place, the ejector will be arrested until the continuing forward movement of the breech-bolt has brought the lifting-shoulder l^3 of the ejector into line with the recess f' of the breech-bolt, at which time the rear end of the ejector will spring back into its normal position, whereby the retracting-shoulder l^2 will be cleared from the point i of the frame. This operation permits the breech-bolt to move forward with respect to the ejector for a distance represented by the separation of the ejecting-shoulder l and the operating-shoulder l' , so that the real effect of temporarily stopping the ejector by means of the retracting-shoulder l^2 is to permit the forward face of the breech-bolt to catch up, so to speak, with the ejecting-shoulder l . The object of this is to insure a right position of the ejector prior to the elevation of the head of the cartridge, being fed squarely in front of the breech-bolt, with the forward face of which the ejecting-shoulder l must then be practically flush; for, if the ejector were in the position in which it is shown in Fig. 10 at the time of lifting the

head of the cartridge being fed, into its highest position, in which it is squarely in front of the breech-bolt, the ejector would interfere with the feeding of the cartridge, either making its feeding impossible or cocking it off one way or the other. In this connection I may say that although the ball end of the cartridge is elevated at about the time the breech-bolt begins to move forward the head of the cartridge is not released and allowed to assume a position squarely in front of the breech-bolt until the same has moved forward for something like half its length. In this connection I may say that the use of my improved ejector is not limited to a breech-bolt constructed and operated in the particular manner shown and described.

The last feature of my invention consists in a sliding lock M , arranged to play up and down in a suitable opening M' , formed for it in the tie M^2 of the frame I . The extreme upper end of the lock is constructed with a locking-rib m , taking into a transverse locking-notch m' , formed in the under face of the rear end of the slide F^2 . At its lower end the lock is slotted, as at m^2 , to receive a guiding and supporting pin m^3 , while a spring m^4 , resting at its lower end upon the pin and extending thence upward into the lock, is provided for exerting a constant effort to lift the lock and snap its locking-rib into the locking-notch in the slide. The upward movement of the lock is limited by its stop shoulder m^5 . The rear face of the lock is cut away, as at m^6 , to receive a shoulder m^7 , which enters it from the forward edge of the hammer D^3 , which is constructed and arranged so that, just before it reaches the limit of its down or fired position, the shoulder m^7 engages with the bottom of the notch m^6 and depresses the lock so as to disengage its rib m from the notch m' , and thus release the slide. By means of the lock the breech-bolt slide, and hence the breech-bolt, is locked in its closed position, from which it cannot be unlocked except by firing the gun or letting the hammer down, which is sometimes done for the particular purpose of unlocking the slide, and hence the breech.

It is obvious that the several features of my invention shown and described are not necessarily used in combination with each other in one gun, but that they may be used in any combinations and wherever applicable in other situations, as in guns of other construction. I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a box-magazine fire arm, the combination with a cover or plate, pivotally hung by

its forward end and closing the bottom of the box-magazine, of a carrier pivotally mounted at its forward end in the forward end of the said cover or plate, and a spring for lifting the carrier to feed the cartridges upward in the box-magazine, substantially as set forth.

2. In a box-magazine fire arm, the combination with a cover or plate adapted to close the open bottom of the box-magazine and pivotally hung by its forward end, of a carrier pivoted at its forward end in the forward end of the cover or plate, and a spring arranged to coact with the carrier to lift it to feed the cartridges upward in the box-magazine, and to at the same time coact with the cover or plate to hold the same in its closed position, substantially as set forth.

3. In a box-magazine fire arm, the combination with a cover or plate, adapted to close the open bottom of the box-magazine and pivotally hung by its forward end, of a carrier pivoted in the forward end of the said cover or plate, and a spring arranged to coact with the said cover or plate to hold it in both its closed and open positions and with the carrier to lift the same, when the cover or plate is closed, for feeding the cartridges upward in the box-magazine, substantially as set forth.

4. In a box magazine fire-arm, the combination with a cover or plate adapted to close the open bottom of the box magazine, and pivotally hung by its forward end, which is constructed with a shoulder, of a carrier pivotally mounted in the forward end of the said cover or plate and constructed at its forward end with a shoulder, and a spring co-acting with the said shoulders, substantially as set forth.

5. In a box-magazine fire arm, the combination with a cover or plate adapted to close the open bottom of the box-magazine, pivotally hung by its forward end and constructed in its inner face with a longitudinal groove, of a carrier pivoted in the forward end of the said cover or plate and adapted to enter the said groove therein when the plate or cover is swung into its open position, substantially as set forth.

6. In a box magazine fire-arm, the combination with a box magazine having at its forward end a transverse web or tie, of a cover or plate adapted to close the open bottom of the box-magazine, and pivotally hung by its forward end, a carrier pivoted by its forward end in the forward end of the said cover or plate, and constructed at its forward end with a cam-surface which coacts with the said web or tie in forcing the carrier to follow the said cover or plate when swung into its open position, and a spring to hold the cover in its closed position and elevate the carrier to lift the cartridges upward in the box-magazine, substantially as described.

7. In a box-magazine fire arm, the combination with a box-magazine having at its forward end a transverse web or tie, of a cover

or plate pivotally hung by its forward end in the forward end of the box-magazine, the open bottom of which it closes when in its closed position, a carrier pivoted at its forward end in the forward end of the said cover or plate at a point eccentric to the pivot thereof, and constructed with a cam surface arranged to engage with the said web or tie when the plate is swung into its open position for causing the carrier to positively swing open with the plate, and a spring coacting with the carrier in the closed position of the plate to feed the cartridges upward in the box-magazine, substantially as set forth.

8. In a box-magazine fire arm, the combination with a box-magazine, combined with the lower tang of the arm and constructed with two spring fingers arranged to engage with the ball portions of the cartridges, and with a box-like, forwardly-inclined guideway to receive the heads of the cartridges; of a cover or plate pivotally hung by its forward end and adapted to close the open bottom of the box-magazine, a carrier pivoted at its forward end in the forward end of the plate or cover, and a carrier-spring coacting with the carrier to lift the cartridges upward in the box-magazine, substantially as set forth.

9. In a fire arm, the combination with a breech-bolt, of a longitudinally and laterally movable ejector, mounted therein and furnished at its forward end with an inwardly projecting ejecting shoulder, and an outwardly projecting operating shoulder located in the rear of the ejecting shoulder, and at its rear end with an inwardly projecting lifting shoulder and an outwardly projecting retracting shoulder, substantially as set forth.

10. In a fire arm, the combination with a frame constructed with a locking abutment, of a breech-bolt adapted to have its rear end swung into engagement with the said abutment, whereby it is locked in its closed position, and constructed with a longitudinal groove terminating at its rear end in a recess, the forward wall of which is beveled, and an ejector located in the said groove and constructed at its forward end with an ejecting shoulder which engages with the heads of the cartridges, and with an operating shoulder which engages with the said abutment face, and at its rear end with a lifting shoulder which enters the recess of the breech-bolt and coacts with the beveled forward wall thereof, and with a retracting shoulder which temporarily engages with the frame of the arm during the forward movement of the breech, whereby the ejector is virtually retracted so as to bring its ejecting shoulder into substantial alignment with the forward face of the breech-bolt, substantially as set forth.

11. In a fire-arm, the combination with a breech-bolt, of a breech-bolt slide located at one side thereof and in the same horizontal plane therewith, a hammer, a spring-lifted sliding lock located below the rear end of the

breech-bolt slide, and adapted to engage there-
with and lock the same and hence the breech
in its closed position, and engaged by the
hammer for being depressed and retired into
5 its unlocked position just before the hammer
reaches its full down or fired position, sub-
stantially as described.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

JOHN M. BROWNING.

Witnesses:

JOHN E. RAMSDEN,
KATE LINEHAN.