

No. 708,304.

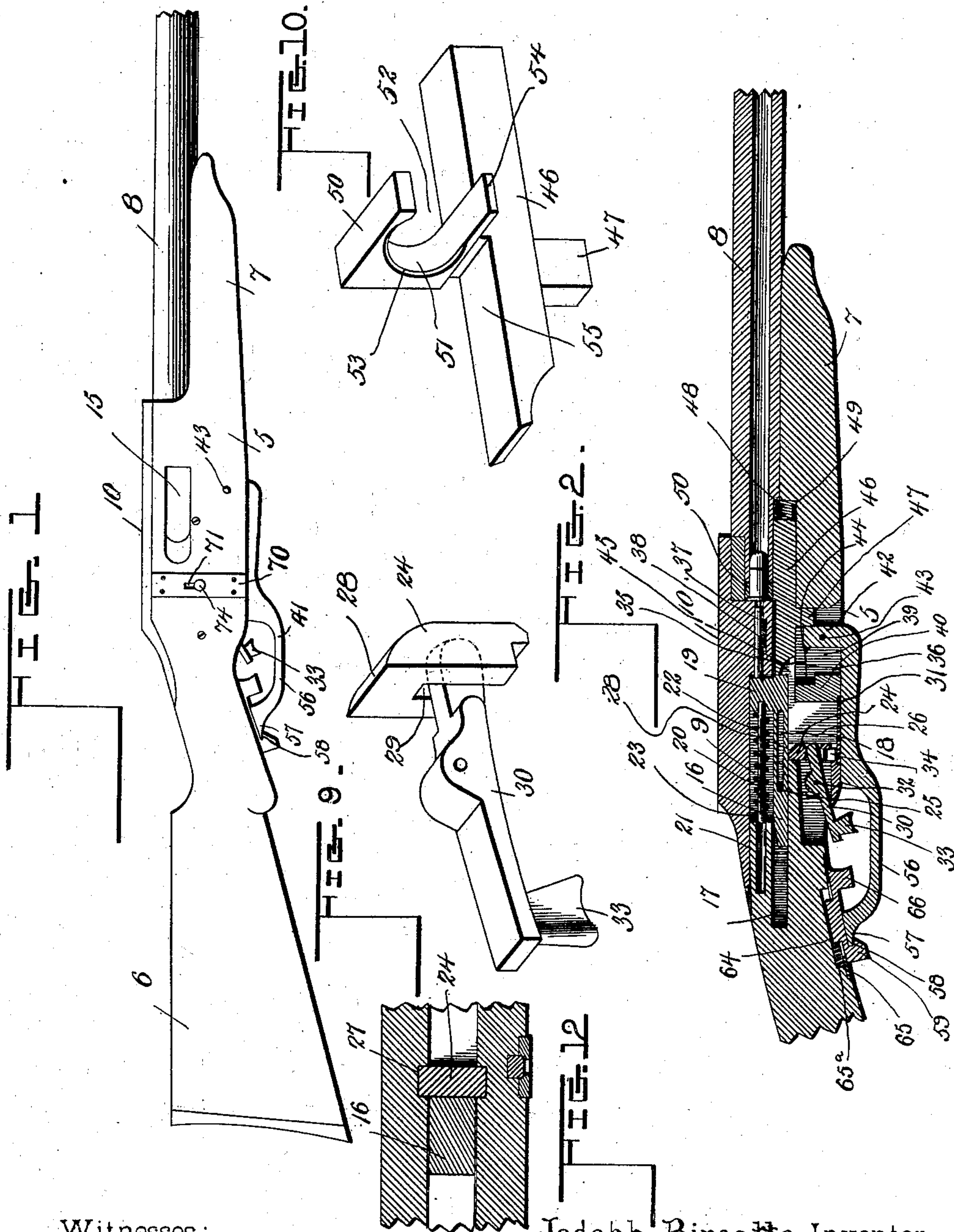
Patented Sept. 2, 1902.

J. BINCETTE.
BREECH LOADING FIREARM.

(Application filed July 31, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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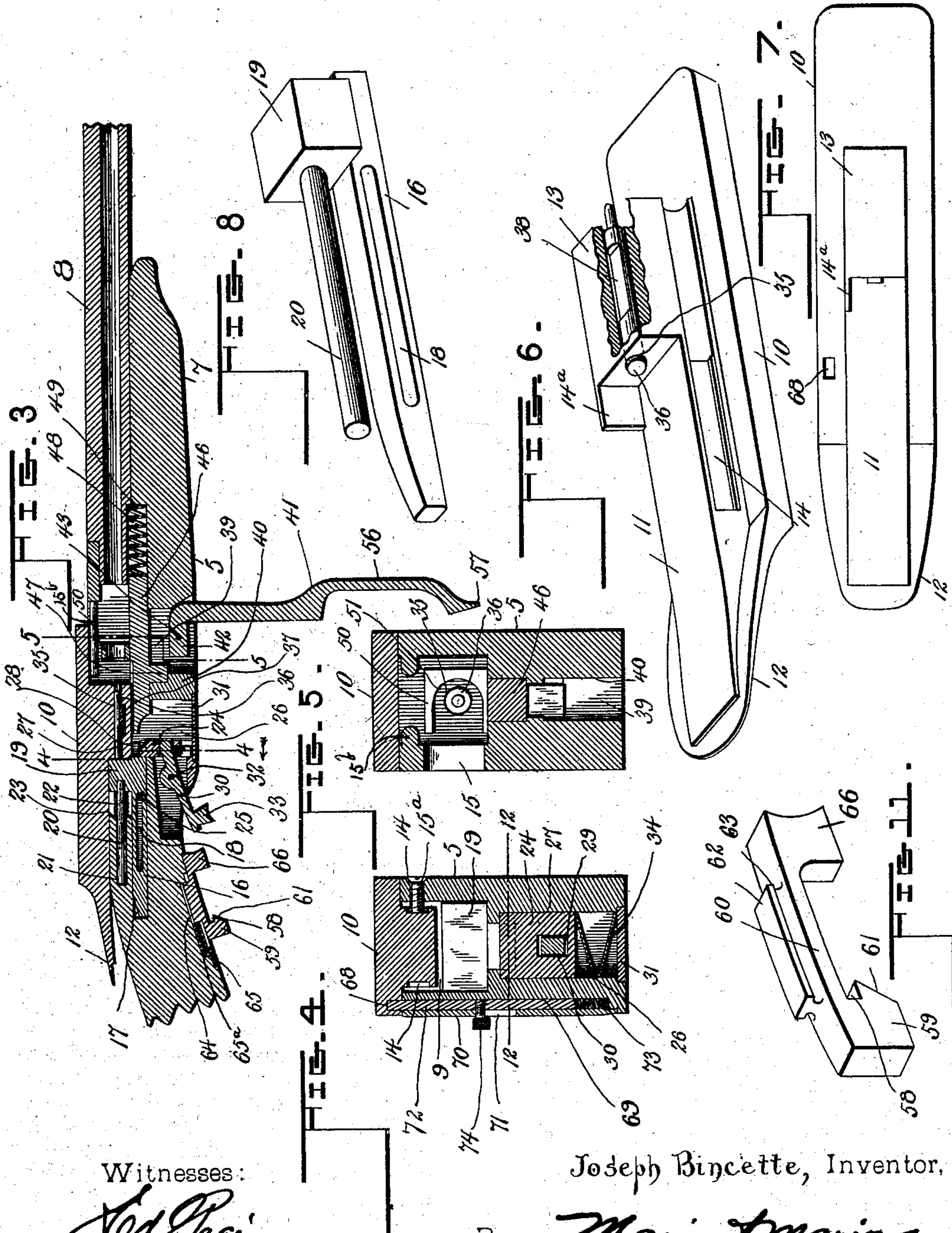
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UNITED STATES PATENT OFFICE.

JOSEPH BINCETTE, OF ST. CONSTANT, CANADA.

BREECH-LOADING FIREARM.

SPECIFICATION forming part of Letters Patent No. 708,304, dated September 2, 1902.

Application filed July 31, 1901. Serial No. 70,326. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BINCETTE, a subject of His Majesty the King of Great Britain, residing at St. Constant, county of Laprairie, Province of Quebec, Canada, have invented certain new and useful Improvements in Breech-Loading Firearms; and I do hereby declare that the following is 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.

My invention relates to improved loading, unloading, and firing mechanism in small-arms of that type wherein the barrel is rigidly secured to the gun-stock and the cartridge is inserted through a lateral opening on the side of the gun immediately behind the breech end of the barrel.

The essential feature of the invention consists in a longitudinally-reciprocating block or plate which overlies the rear end of the breech in the firing position and has a depending block carried thereby, which block is adapted to act both as a breech-block and to carry the firing-pin, which discharges the cartridge, and also to act as an actuator to return the hammer into cocked position after the gun has been fired and in the act of reloading the piece.

The invention further includes a sliding extractor-collar which is carried on a longitudinally-reciprocating bar located in a chamber immediately beneath the breech, which bar carries a depending tang, which is locked in position by a lever, whose front end is carried backwardly to form the trigger-guard, and there is a sliding latch immediately behind the trigger, which catches the rear end of this lever and holds it in locked position until after the piece has been fired by pulling the trigger, whereupon the finger is slipped off the trigger and immediately strikes a thumb-piece formed on this latch, so that the extractor-lever is immediately released and the cartridge extracted from the breech without further movement on the part of the user.

My invention consists, moreover, in the novel combination of devices and in the construction and arrangement of parts which are hereinafter set forth, and more particularly pointed out in the claims.

In the drawings hereto annexed, forming a

part of this specification, Figure 1 is a side elevation of a firearm embodying my improvements. Fig. 2 is a longitudinal vertical section taken centrally through the firearm and showing the parts in the position they occupy just after the piece has been fired. Fig. 3 is a similar view to Fig. 2, showing the parts in the operation of recocking the piece, the empty cartridge-shell having been removed. Fig. 4 is a transverse section through the firearm on the line 4 4 of Fig. 3. Fig. 5 is a similar view on the line 5 5 of Fig. 3. Fig. 6 is a perspective detail view of that piece of the mechanism herein termed the "breech-plate," shown bottom side up. Fig. 7 is a plan view of the same from the lower side. Fig. 8 is a detail perspective view of the firing-bolt. Fig. 9 is a similar view of the trigger-lever and sear. Fig. 10 is a similar view of the extractor-piece, and Fig. 11 is a similar view of the retaining-latch for the extractor-lever. Fig. 12 is a fragmentary longitudinal horizontal section through a part of the receiver, taken on the line 12 12 of Fig. 4.

The same numerals of reference denote like parts in all the figures of the drawings.

The numeral 5 designates that portion of the stock of the gun called the "small" or "handle" of the stock, but which is sometimes and which will be herein termed the "receiver," as being more appropriate, in that it is chambered and destined to receive the breech, lock, and trigger mechanism, which constitute my invention and form the operative parts of the gun. The butt or shoulder piece of the stock is shown at 6, the fore-end at 7, and the barrel firmly secured thereto at 8, and the said fore-end 7 forms a solid continuation with the receiver or small of the stock, which is hollowed out to form a chamber 9, adapted to receive the parts of the breech and firing mechanism, to be presently described. This chamber has parallel sides, as indicated in Fig. 4, and is generally rectangular in section, being open at the top, and the opening thus formed is covered by a longitudinal plate or piece 10, which may herein be conveniently termed the "breech-plate," as it covers the breech of the gun when in locked position, besides serving for other purposes, as will hereinafter be seen. This plate 10 is of sufficient width to entirely cover the

opening and the upper side of the receiver, there being sliding ways formed thereon for this purpose, as indicated in Figs. 3, 4, and 5 of the drawings, and in order to form guiding means for the breech-plate it has formed on its under surface a rectangular longitudinal rib 11, which is of slightly less width than the chamber 9 and adapted to slide between the walls thereof. The rear end of the breech-plate is tapered downwardly, as shown at 12, in order to form a continuation of the bend of the stock when the breech-plate is pushed into its forward position, (see Fig. 2,) and to retain the plate in sliding connection with the receiver the rib 11 is formed with lateral grooves 14, into which project the ends of screws 15^a, which pass through openings in the sides of the receiver, as shown in Fig. 4, and the forward ends of the grooves 14 are adapted to be guided by the longitudinal ribs 15^b, formed on the front upper edge of the chamber 9, as shown in Figs. 3 and 5.

Depending from the lower side of the rib 11 on the breech-plate is a block 13, which is in line with the bore of the barrel and adapted to cover the same when the breech-plate is in firing position, as shown in Fig. 2—that is to say, the block 13 serves the function of a breech-block; but it has the additional function of an actuator-tang to actuate the hammer or firing-bolt of the piece and push it back into cocked position. One side of the breech-block 13 is prolonged to form a rectangular flat lug 14^a, the function of which is to assist in closing the cartridge-slot 15, formed upon one side of the piece immediately back of the breech, it being necessary that the right side of the block 13, on which is located the lug 14^a, shall be of sufficient length to completely cover this slot when the piece is being fired.

The firing of the piece is accomplished by a slidable firing-bolt, which is actuated or pushed forward upon its release from the sear by a coiled spring reacting against the rear end of the chamber 9, and this firing-bolt is of the form shown in Fig. 8 and made up of three main parts, which are formed integral—that is to say, a rectangular bolt or bar 16, which slides horizontally in a suitable recess 17, lying just below and rearwardly of the chamber 9 and forming a continuation thereof, this bolt having a horizontal longitudinal slot 18 for the purpose hereinafter named, a hammer-block 19, carried just over the upper front end of the bolt 16 and destined to impinge upon the firing-pin, which will be hereinafter described, this block being of the same width as the chamber 9 and adapted to reciprocate therein longitudinally, as indicated in Figs. 2, 3, and 4, and a guide-stem 20, which projects rearwardly from the center of the block 19 and is received in a recess 21, forming a reduced continuation of the chamber 9 and of the same size as the stem 20, whereby the latter is adapted to assist in guiding the firing-bolt in its reciprocative

movement, and, moreover, especially to form a stable support for the coiled mainspring 22, which is mounted to surround the stem 20 and bears at its front and rear ends, respectively, against the rear face of the hammer-block 19 and the wall 23 of the chamber 9, as shown. It will be seen from this construction that the spring 22 is adapted to impel the hammer-block and the entire firing-bolt forwardly to discharge the piece at the instant that the lower front edge of the bolt is released by the nose 28 of the sear 24, which is mounted to reciprocate transversely—that is to say, at right angles to the motion of the firing-bolt in the vertical slot 26, situated just below the chamber 9 and having recessed guide-grooves 27, which guide the sear in its vertical motion. The longitudinal motion of the firing-bolt is limited by a pin 25, which passes from side to side of the recess 17 through the slot 18 in the bolt 16, so as to prevent the guide-stem 20 from leaving its recess when the breech-plate 10 is removed and to prevent the bolt from being impelled too far forwardly.

The sear 24 is actuated to release the firing-bolt by a trigger-lever 30, pivoted at an intermediate point thereof upon a pin 32 and adapted to oscillate in a recess or chamber hollowed out in the under portion of the receiver, as shown, and the trigger has a concave finger-piece 33, upon which the finger of the operator presses upwardly when the piece is fired. The trigger-chamber extends considerably forward of the trigger-lever and sear, as shown, and its lower side is partially closed by a bottom plate 31, which projects over the lower end of the slot 26, and between the bottom of the sear and the upper side of the plate 31 is located the sear-spring 34, which is in the shape of a V-shaped plate having the same width as the slot in which it is located and adapted to keep the sear pressed upwardly into the position shown in Fig. 3. The nose of the trigger-lever 30, projecting forwardly of the pivot 32, passes through an opening 29 in the sear in order to operate the same to draw the sear when the finger-piece 33 is pressed, thus firing the piece.

The breech-block 13 is provided with a cylindrical longitudinal aperture 35, wherein slides the firing-pin 36, the same being pointed at its forward end, as shown in Fig. 6, so as to strike the cap of the cartridge centrally and explode the same, while the rear end of the pin 36 projects normally back of the rear face of the block 13 and is retained in this position by a coiled spring 37, which is seated in corresponding recesses 38, formed in the lower side of the pin 36 and block 13, respectively, so that the pin is retained yielding in its firing position ready to be struck by the hammer-block 19.

In front of the trigger-chamber of the receiver and just beneath the loading-chamber back of the breech which forms the front end of the chamber 9 there is a third chamber or

recess 39, hollowed out in the fore-end of the piece, the same being separated from the trigger-chamber by a partition 40, and in it is pivotally mounted upon a transverse pin 43 the upturned end 42 of the extractor-lever 41, this lever being turned backwardly of its pivot 43 and being shaped to form a trigger-guard 56, which covers the finger-piece 33 of the trigger-lever, and back of the guard 56 it is formed with a nose or catch 57, which is received by the notch 58, formed in the rear end 59 of a sliding latch 60, the end 59 being formed with an oblique cam-face 61 just below the notch 58 and with which the nose 57 engages, so as to push the latch backwardly when the extractor-lever is returned to its position over the trigger and to enable it to snap into the notch 58, as shown in Figs. 1 and 2. The latch-piece 60 is provided upon its upper side with a projecting fin 62, which is provided with lateral grooves 63, so as to permit the latch-piece to be passed over the slotted or forked end of a latch-plate 65, which is secured to the handle of the stock just back of the trigger and covers a recess 64, in which works a coiled spring 65^a, seated at its front end against the rear end of the fin 62, so as to keep the latch-piece pressed forwardly, as shown in Figs. 2 and 3. The forward end of the latch-piece 60 is provided with a downwardly-projecting finger-piece 66, which is located within the nose 57 of the trigger-guard and just behind the finger-piece 33 of the trigger, so that it will be seen that on pulling the trigger the finger slips immediately back upon the finger-piece 66, and this being likewise pulled the extractor-lever is released and caused to swing open both by gravity and by the pressure of a spring 48, which will be presently described.

The extractor-piece, which is operated to withdraw the spent cartridge-shell from the firing-chamber, is shown in detail in Fig. 10 and consists of a longitudinal bar or bolt 46, operating in a corresponding recess 45, having its front end just beneath the breech of the barrel and its rear end extending backwardly and communicating with the chamber 9 and the trigger-chamber. The bolt 46 has a tang 47 depending from its lower side, about midway thereof, which operates in the chamber 39, the latter being hollowed out rearwardly or formed with a notch 44 to permit the full movement of the extractor. The tang 47, as will be seen, projects far enough downwardly to be engaged with the upstanding end 42 of the extractor-lever, this end being located above the pivot 43, so that the pressure of the coiled spring 48, located in the forward end of the recess 45 and abutting against the front wall 49 thereof, will act to turn the extractor-lever about its pivot and simultaneously throw it open and project the bar 46 into its rearmost position, as shown in Fig. 3. The bar or bolt 46 carries on its upper side a cartridge-collar 50, which reciprocates in the firing-chamber forming the for-

ward end of the receiver-chamber 9 and has a circular opening 51 therethrough adapted to form a socket for the cartridge-shell and which is open at one side, as shown at 52, opposite the cartridge-slot 15, to enable the head of a cartridge to be inserted thereinto. The socket 51 is provided at its rear end with a circumferential groove 53, adapted to form a seat for the rim of the cartridge, the latter being placed in the slot 15, with its head and rim seated, respectively, in the socket 51 and groove 53, whereupon the collar, extractor-bolt, and cartridge are pushed into forward or firing position by the forward motion of the breech-block, as will be hereinafter explained, and the tang 47 is brought back to the front end of the chamber 39 and locked in this position by the closing of the extractor-lever 41.

In order to lock the breech-plate in its forward or firing position against the recoil caused by the explosion of the cartridge, I provide the breech-plate, on the under side of one flange thereof, with a vertical rectangular socket 68, as shown in Figs. 4 and 7, this socket being adapted to receive the upper end of a spring-pressed locking-bolt 72, which operates in a suitable guide-groove 69, formed vertically in the outer side of the receiver and covered by a plate 70, so as to hold the bolt 72 in slidable position. In the lower end of the grooved recess 69 is located a coiled spring 73, which abuts against the bottom of the groove and the lower end of the locking-bolt, so as to keep the same resiliently pressed upward and to cause it to be projected into the socket 68 as soon as the plate has been pushed home forwardly into its firing position. It will be seen that the breech-plate is thus locked firmly in position against the recoil of the discharge; but when it is desired to load the gun the locking-bolt 72 is disengaged from the breech-plate by downward pressure exerted upon a finger-stud 74, which is screwed into the locking-bolt and passes through a slot 71 in the plate 70, this stud being provided, preferably, with a milled head to facilitate the manipulation, as shown. The stud 74 is preferably made detachable from the locking-bolt, so that in case it is desired to permanently lock the piece against operation and to prevent unauthorized persons from using the gun the stud 74 is simply unscrewed from its socket, and the breech-plate will thus be firmly locked in position and cannot be operated to reload the gun, especially if the secret of the locking-bolt or its mode of operation be not understood, as will generally be the case by a stranger attempting to operate it. If, on the other hand, it be simply desired to lock the breech-plate permanently, as during a period when the gun is being carried without it being desired to use the piece and to prevent the plate being accidentally pulled back by catching in objects, then the stud 74 is screwed firmly against the back of the recess 69, so as to hold it in locked position.

The operation of the gun in loading, firing, unloading, and reloading the same is as follows: In order to load the piece, the stud 74 is first pressed with the thumb of the right hand, 5 which supports the gun in order to release the breech-plate 10, which is then drawn backwardly by the left hand into the position shown in Fig. 3, the block 13 hereby acting as an actuator-tang or cocking-block by pushing 10 against the head 19 of the firing-bolt to retract it into cocked position, whereupon the beveled nose 28 of the sear 24 slips over the front end of the bolt 16, thus holding the piece cocked, and at the same time the block 13 is 15 slid past the cartridge-opening 15, so as to permit the piece to be loaded, and the extractor-lever is released by pressing the finger against the finger-piece 66 of the latch 60, whereupon the spring 48 swings the extractor-lever into 20 the position shown in Fig. 3 and throws the extractor-bolt carrying the collar 50, with the empty shell, backwardly, withdrawing it from the breech of the gun and throwing it opposite the slot 15, whence it is thrown by slightly 25 tipping the gun toward the right or by a quick jerk in that direction. The several parts of the apparatus will now be in the positions shown in Fig. 3. A fresh cartridge is now inserted through the slot 15, the head and rim 30 thereof being pushed into the socket 51 in the collar 50. The next operation is to push the breech-plate 10 forwardly, whereupon the block 13 carries the collar 50, the cartridge, and the extractor-bolt forward against the 35 pressure of the spring 48 until the locking-bolt 72 snaps into the socket 68, and, lastly, the extractor-lever is closed, when the piece is ready for firing. Upon pulling the trigger the sear 24 will be withdrawn from the firing-bolt, causing it to be projected violently forward by the 40 pressure of the spring 22 and to strike against the head of the firing-pin 36, projecting it in turn into the cap of the cartridge and exploding the latter. At this point the various 45 parts are in the position shown in Fig. 2, and immediately after firing the finger holding the trigger will slip back upon the finger-piece 66 to release the extractor-lever, the thumb will be operated to press downwardly 50 upon the stud 74, and the breech-plate 10 again drawn back to recock the firearm and extract the empty shell, as before, when the cycle of operations is ready to be repeated.

The advantages of my improved loading 55 and firing mechanism have been hereinbefore set forth and will now be evident to those skilled in the art of firearms, and it may be added, further, by way of explanation that the firearm hereinbefore described is simple 60 in construction and not apt to get out of order and that the entire cycle of operations necessary in operating the gun is embodied in three movements—to wit, those of the extractor-lever, the locking-bolt, and the 65 breech-plate, respectively, these being operated successively and in the order named, so that no confusion will ordinarily take place

nor delay caused in the successive firing of the cartridges, and the rapidity with which the latter may be done is considerably increased. 70

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of 75 the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make such modifications as are included in the scope of the following 80 claims.

I claim—

1. A breech mechanism for firearms comprising a sliding breech-plate covering the upper side of the receiver-chamber, a breech-block depending from said plate, a firing-pin 85 resiliently mounted in said breech-block and projected through the front end thereof, a firing-bolt slidable in a recess in the receiver and having a head to engage said firing-pin 90 and to be engaged by said breech-block when the latter is retracted, a sear engaging said firing-bolt when retracted, a spring to project said firing-bolt forwardly when released, and a transverse latch-bolt 71 projected into a 95 slot in the breech-plate to lock it in advanced position.

2. A breech mechanism for firearms comprising a breech-plate adapted to reciprocate on the upper side of the receiver and to cover 100 the receiver-chamber, a breech-block depending from the lower side of said breech-plate and to close the end of the barrel, a firing-pin resiliently mounted in said breech-block, a firing-bolt having a tang 16 sliding in a 105 longitudinal recess in the receiver-chamber, and a head to strike said firing-pin and to be engaged by the rear face of said breech-block to retract the bolt when the breech-plate is retracted, a transverse pin passing 110 through a slot in said tang to limit the movement of said firing-bolt, a guide-stem 20 mounted on the head of said firing-bolt parallel with and above the tang thereof and 115 guided in a longitudinal recess in the rear end of the receiver-chamber, a coiled spring mounted on said guide-stem, a vertically-reciprocating sear having a nose to engage over the front end of said firing-bolt when retracted, a trigger-lever having a finger-piece 120 and an arm engaging said sear to move it vertically, and means for locking said breech-plate in forward position.

3. A breech mechanism for firearms comprising a breech-plate to reciprocate on the 125 upper side of the receiver and to cover the receiver-chamber, a breech-block depending from the lower side of said breech-plate to close the end of the barrel, a firing-pin resiliently mounted in said breech-block, a firing-bolt 130 having a tang 16 sliding in a longitudinal recess in the receiver-chamber and a head to strike said firing-pin and engaged by the rear face of said breech-block to retract

the bolt when the breech-plate is retracted, a transverse pin passing through a slot in said tang to limit the movement of said firing-bolt, a guide-stem 20 mounted on the head of said firing-bolt parallel with and above the tang thereof and guided in a longitudinal recess in the rear end of the receiver-chamber, a coiled spring mounted on said guide-stem, a vertically-reciprocating 10 sear having a nose to engage over the front end of said firing-bolt when retracted, a trigger-lever having a finger-piece and an arm engaging said sear to move it vertically, means for locking said breech-plate in for-

ward position, an extractor-bolt reciprocally 15 mounted below the barrel and in advance of the firing-bolt, a spring pressing against the forward end of said extractor to project the same rearwardly, and means for releasing said extractor-bolt when the breech-plate is with- 20 drawn.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOSEPH BINCETTE.

Witnesses:

M. T. BEAUPARLANT,
O. GEYETTE.