

J. E. MASON.

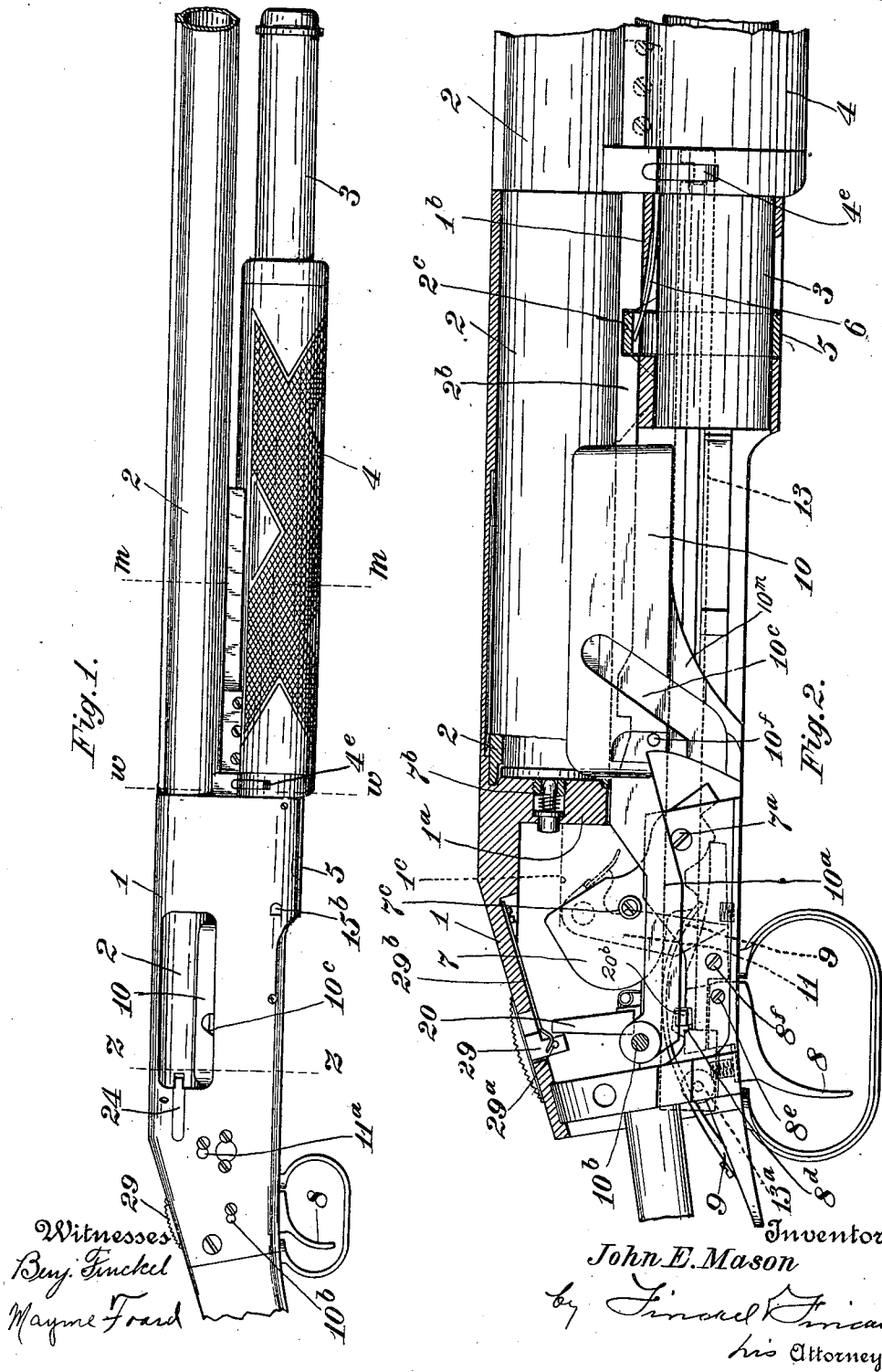
FIREARM.

APPLICATION FILED JUNE 30, 1910.

993,782.

Patented May 30, 1911.

7 SHEETS—SHEET 1.

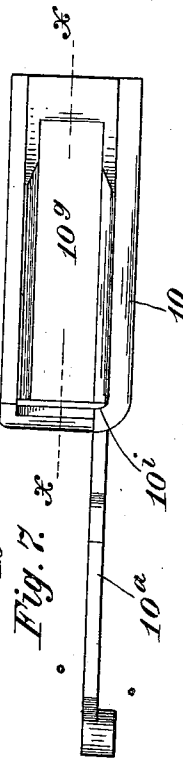
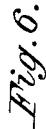


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7 SHEETS—SHEET 3.

Fig. 5.



John E. Mason
Finch & Finch
his Attorneys

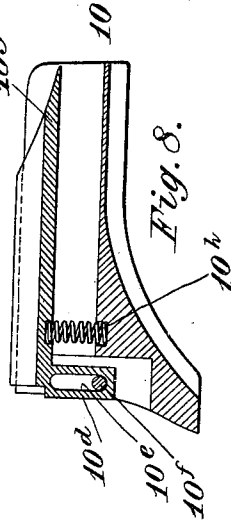


Fig. 8.

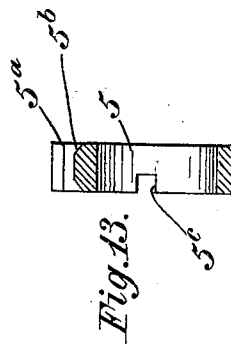
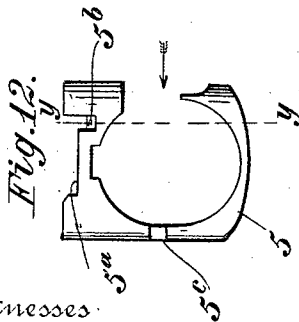
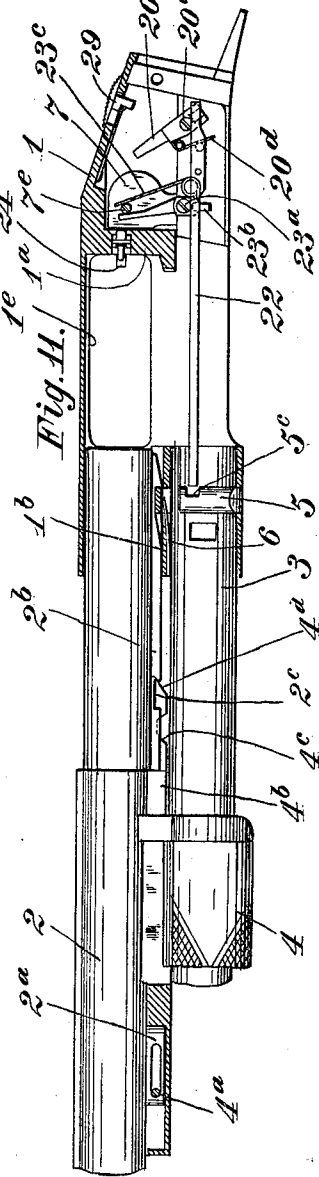
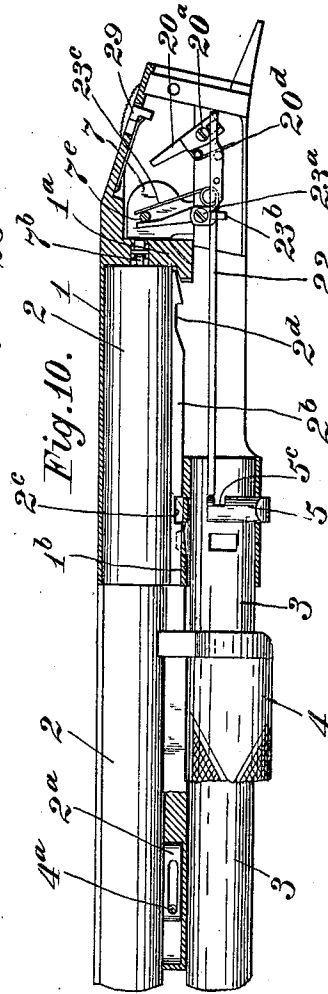
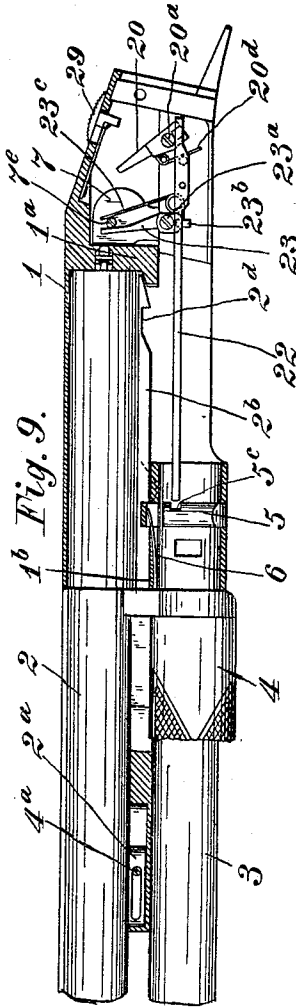
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7 SHEETS—SHEET 4.

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Witnesses
Buy. Finckel
Wayne Foard

Inventor
John E. Mason
by Linckel Finckel
his Attorney

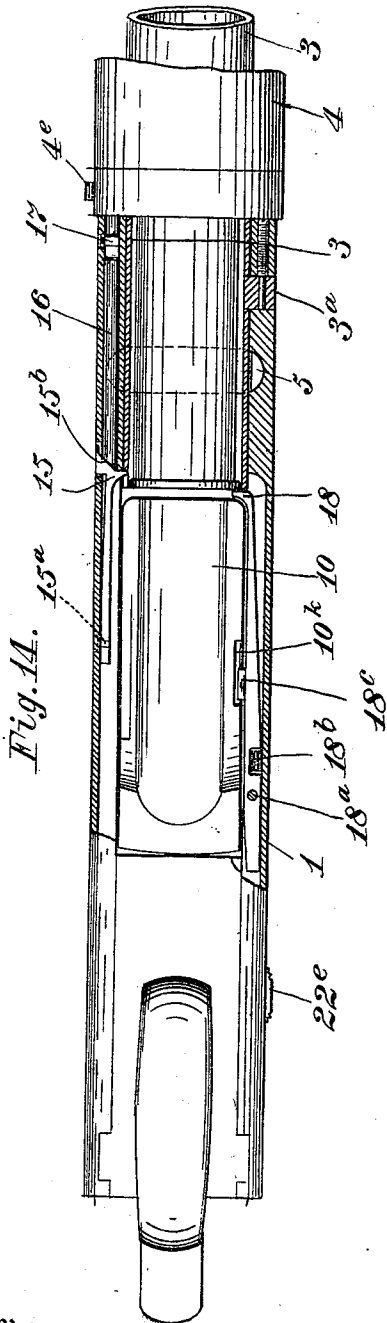
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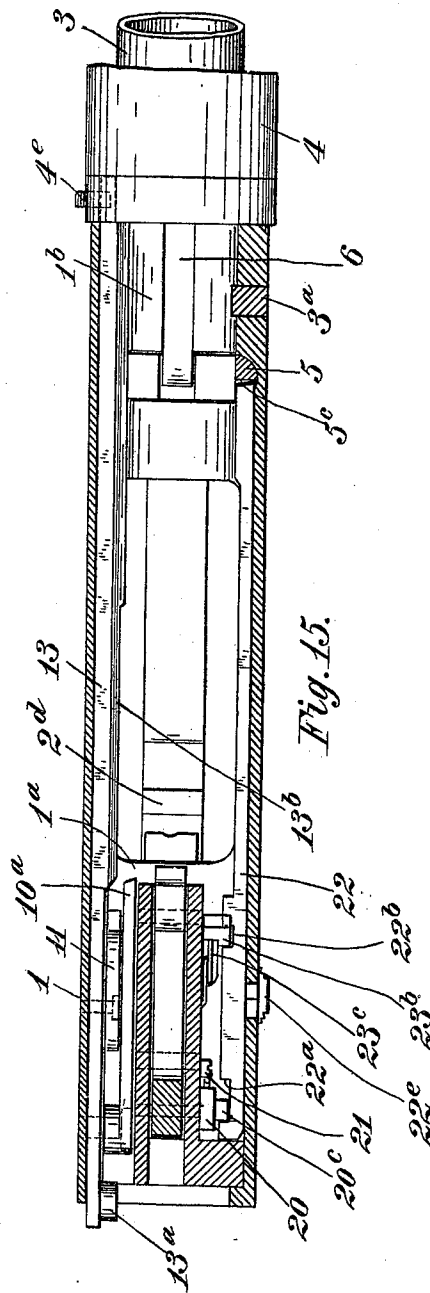
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7 SHEETS—SHEET 5.



Witnesses
Benj. Linschel
Mayme Foad

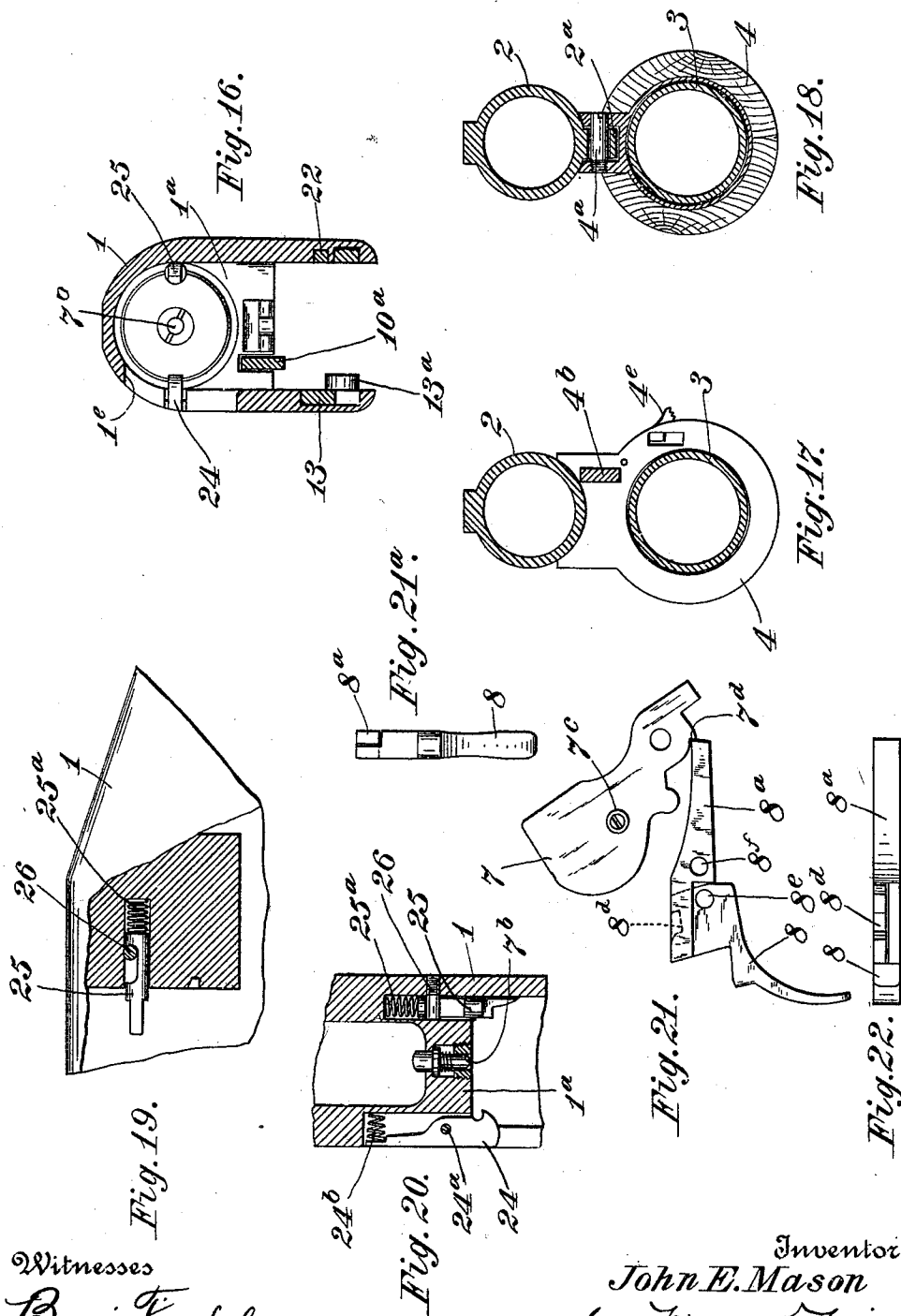


Inventor
John E. Mason
by Linschel & Foad
his Attorneys

Patented May 30, 1911.

7 SHEETS—SHEET 6.

993,782.



Witnesses
Benj. Finckel
Wayne Foard

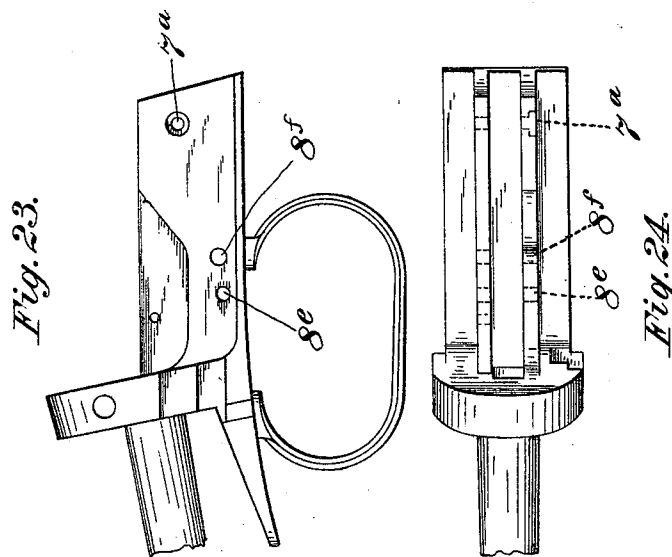
Inventor
John E. Mason
by Finckel Finckel
his Attorneys

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J. E. MASON.
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APPLICATION FILED JUNE 30, 1910.

Patented May 30, 1911.

7 SHEETS—SHEET 7.



Witnesses
Benj. Linckel
Wayne Ford

Inventor
John E. Mason
by Lincoln L. Linnell
his Attorneys

UNITED STATES PATENT OFFICE.

JOHN E. MASON, OF COLUMBUS, OHIO.

FIREARM.

993,782.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed June 30, 1910. Serial No. 569,713.

To all whom it may concern:

Be it known that I, JOHN E. MASON, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Firearms, of which the following is a specification.

The invention relates more especially to magazine-firearms, of the kind shown in my United States Patent No. 843,542, dated February 5, 1907, and has for its chief objects to provide improved means for the automatic cocking of the gun during the closing operation, and generally to simplify the construction and render more nearly perfect the operation of such implements.

The invention is embodied in the construction hereinafter described and claimed, the invention not being confined in its embodiment to the precise forms of parts shown in the accompanying drawings, forming part hereof.

In the said drawings, Figure 1 is a view in elevation of the right-hand side of the gun with parts broken off, the gun being closed. Fig. 2 is a sectional view taken longitudinally of the breech-frame, on a larger scale, looking at the right-hand side of the gun and showing most of the operative parts in full, the gun being closed and cocked. Fig. 3 is a view mainly in side elevation, on the same scale as Fig. 1, with parts broken off and looking at the left-hand side of the gun, the gun being closed. Fig. 4 is a longitudinal sectional view on a larger scale (the scale being the same as that of Fig. 2) looking at the left-hand side and showing most of the operative parts in full. Fig. 5 is a view similar to that shown in Fig. 1 except that the gun is open. Fig. 6 is a longitudinal sectional view of the breech-frame, disclosing the interior mechanism, mostly in full, but in the open position of the gun and looking from the right-hand side. Fig. 7 is a top plan view of the shell-carrier removed from the gun. Fig. 8 is a sectional view taken on the line $x-x$, Fig. 7, looking up. Figs. 9, 10, and 11 are detail longitudinal sectional views with the shell-carrier and trigger omitted and looking from the left-hand side, showing chiefly the barrel-latch and trigger-locking device and the different positions of the barrel-latch and the parts operating in conjunction therewith. Fig. 12 is a view in elevation of the barrel-latch looking at its rear face. Fig. 13 is a sec-

tional view of the latch on the line $y-y$, Fig. 12 and looking in the direction indicated by the arrow. Fig. 14 is a view looking at the underside of the gun and the rear end of the magazine, a portion of the breech-block frame being in section. Fig. 15 is a longitudinal sectional view exposing the lower side of the interior mechanism with parts broken off and removed. Fig. 16 is a transverse sectional view, on a larger scale, on the line $z-z$, Fig. 1, with the barrel removed and looking toward the standing breech. Fig. 17 is a similar view on the line $w-w$, Fig. 1, looking toward the muzzle of the gun. Fig. 18 is a similar view on the line $m-m$, Fig. 1. Fig. 19 is a detail view of the shell-ejecting device. Fig. 20 is a detail view of the shell extractor and shell ejector. Fig. 21 is a detail in side view of the trigger mechanism, showing also the hammer-lever. Fig. 21^a is a rear view of the trigger and trigger lever. Fig. 22 is a plan view of the trigger mechanism. Figs. 23 and 24 are side and plan views, respectively, of the frame in the rear chamber of the breech-frame, showing the trigger-guard thereon.

In the views, 1 designates the breech-frame, which is a hollow structure open at its bottom and provided with a shell-ejecting opening 1^e near the top of its right-hand side.

1^a designates the standing breech, provided with a suitable spring retracted firing pin 7^b of ordinary construction. The standing breech divides the breech-frame into two chambers hereinafter referred to as "forward" and "rear" chambers.

2 designates the barrel, that has a sliding connection with the forward upper portion of the breech-frame, so that it can be moved to and from the standing breech. The barrel is furnished at the under side of the breech portion with a longitudinal tongue 2^b, having notches 2^c and 2^d. The outer notch 2^c is square cornered while the outer wall of the notch 2^d is inclined.

3 designates the magazine, which is removably attached to the forward end of the breech-frame below the barrel by means of a suitable spring-actuated latch 3^a. (See Figs. 3 and 14.)

4 designates a sliding grip or fore-end consisting of a metallic tube cased with wood, said grip encircling the rear portion of the magazine and being connected with

the barrel by means of a transverse pin 4^a on the grip passed through a slot in a longitudinal tongue 2^a on the under side of the barrel, so that the grip has a limited sliding connection with the barrel. The barrel is moved to and from the standing breech by means of the grip.

5 designates the barrel latch, (see particularly Figs. 12 and 13) which latch slides in suitable grooves in the opposite sides of the breech frame. The barrel-latch is generally of the form of the letter capital C, as seen in Figs. 12 and 13, the elongated central opening thereof permitting it to work vertically with reference to the rear end of the magazine, which it embraces. The barrel-latch is pressed upward or toward the barrel by a flat metal spring 6, secured to a rigid cross-piece 1^b, extending between the sides of the forward end of the breech-frame, so that the latch is thrown into the notch 2^c when the barrel is closed against the standing breech and into the notch 2^d when the barrel is slid outward to the intended limit of its outward movement in the shell ejecting and reloading operations. The square-cornered edge 5^a of the barrel-latch engages the notches 2^c and 2^d. To release the latch from the notch 2^c, so as to permit the forward sliding of the barrel in the breech-frame and the ejection of a fired shell, the sliding grip is provided at its rear end with a finger 4^b, having a notch 4^c in its lower edge with beveled end walls. The rear end of the said finger 4^b is beveled as seen at 4^d. The finger 4^b engages the barrel-latch at the edge 5^b, which is countersunk below the barrel-engaging edge 5^a. The said edge 5^b of the barrel-latch is suitably beveled to permit the easy depression of the latch by the finger 4^b when the grip is slid forward. The finger 4^b is made of sufficient length and depth to depress the latch out of the notch 2^c and hold it disengaged from the barrel until the movement of the grip carries the barrel to a point where the latch will be pressed by the spring 6 against the tongue 2^b, and against this tongue the latch will remain until the notch 2^d comes into position to receive it. The notch 2^d is designed, in conjunction with the barrel latch, to automatically limit the forward movement of the barrel and prevent its accidental removal from the breech-frame in the ordinary operation of the gun. The inclined forward wall of the notch 2^d, it will be observed, permits the barrel to be easily slid rearward in its initial closing or rearward movement. It will be noted that the limited sliding movement of the grip with reference to the barrel permits the operation of the finger 4^b to disengage the barrel-latch preparatory to the forward movement of the barrel itself.

7 designates the hammer, which is pivoted at 7^a in the frame in the rear chamber of the

breech frame. The hammer is furnished on its right hand side with a laterally-projecting pin 7^c provided with an antifriction roller, against which the cocking-lever presses to cock the hammer, as hereinafter described.

The trigger is compounded mainly of two parts—namely, the part 8, that is directly operated by the finger of the hand, as usual, and a part 8^a, that engages the hammer. The forward end of the part 8^a engages a toe 7^d on the hammer to hold the latter in cocked position. The part 8 is pivoted at 8^e and the part 8^a at 8^f independently of each other and between the walls of the frame (see Figs. 23 and 24) in the rear chamber of the breech-frame so that the part 8 can operate on the part 8^a to release the hammer. The part 8 is notched, as seen at 8^g, to permit the operation of the trigger, as hereinafter described.

9 designates a curved spring secured at its rear end to the frame and the forward end of which spring presses upward against and operates the hammer.

10 designates the shell carrier or elevator, that swings vertically in the forward chamber of the breech-frame. This carrier has an arm 10^a, that extends into the rear chamber of the breech-frame, said arm being pivoted at 10^b to the frame in said chamber. The carrier also contains a yielding shell support 10^c consisting of a trough-like member having at its rear end a downwardly extending projection 10^d provided with a slot 10^e through which extends a transverse pin 10^f fixed in the carrier proper to guide and retain the shell support. Forward of the projection 10^d and seated in sockets between the said shell support and carrier proper is a coil spring 10^g. The shell support is thus yieldingly supported with a capacity for bodily up and down as well as a rocking movement at the forward end. A shoulder at 10^h in the carrier body coöperates in guiding the shell support at the rear end and prevents the spring from throwing the forward end unduly upward. The carrier body proper is provided in its outer right hand side with an inclined angular groove 10ⁱ open at its lower end. By reason of the pivot at 10^b the shell carrier is adapted to be depressed into position to receive a shell from the rear end of the magazine. The side of the carrier near its bottom is also provided with a groove 10^m that is engaged by the cocking rod 13 at its enlarged forward portion or projection 13^b. The function of this engagement is to hold the carrier firmly up when the gun is closed, thereby dispensing with the use of a spring like that designated 12 (see Fig. 6) of my former patent herein referred to. It will be observed that before the stud 13^a of the cocking rod, on the rearward movement of the

rod, leaves the groove 10^c, the enlarged portion or projection 13^b of that rod enters and engages the aforesaid groove 10^m of the shell carrier at the forward end of the latter. The inner wall of the upper portion of the forward chamber of the breech-frame is provided with a spring 1^f which serves to hold the shell flexibly in line with the bore of the barrel, said spring being flattened out when the barrel is closed against the standing breech.

Pivoted at 11^a in the rear chamber is a hammer-cocking lever 11, the upper arm of which is of hook form and when properly operated is adapted to strike against the laterally-extending pin 7^c to draw the hammer rearward to cocked position.

13 designates the cocking-rod. This rod is located and slides in a groove in the inner right-hand side of the breech frame and is removably attached at its forward end by means of a spring-actuated latch 4^e to a metallic ferrule at the rear end of the sliding grip. The rear end of the cocking-rod when the gun is closed reaches back into the rear chamber of the breech-frame and behind the lower end of the cocking-lever, as indicated by broken lines Fig. 2, and by full lines Fig. 15. The rear end of the cocking-rod is made with a lateral stud or projection 13^a, preferably having thereon a roller to reduce friction. The lower arm of the cocking-lever lies in the path of the projection 13^a, and when the grip is moved forward to open the gun the projection 13^a passes under the cocking lever and in the farther forward movement of the cocking-rod the projection 13^a enters the inclined groove 10^c and draws the carrier downward into position to receive a loaded shell from the magazine.

14 is a spring on the cocking-lever to press against the shoulder 1^c in the frame when the cocking rod acts on it in its forward movement to return the lower arm of that lever into position to be operated by the roller 13^a of the cocking rod on its rearward movement.

The magazine contains the ordinary spring-actuated follower for feeding the shells rearward toward and into the carrier somewhat as shown in my former patent referred to. In order to prevent the crowding of the shell behind the leading one into the carrier, there is provided what might be termed a "first-shell stop" consisting, essentially, of a head portion 15, containing an inward projection adapted to extend into the path of the rim of the shell on a spring-arm attached, as seen at 15^a, to the side of the breech-frame. The head portion 15 contains an inclined edge 15^b against which abuts the inner end of a sliding pin 16, the forward end of which is projected beyond the end of the breech frame when the grip

is moved outward to open the gun. The pin 16 is held in proper position and from accidental removal by means of a short screw 17, entering an elongated recess in the side of the pin 16, said recess permitting longitudinal movement of the pin. When the gun is closed, the contact of the ferrule at the rear end of the grip impels the pin 16 rearwardly, and so releases the shell against the second stop. This second stop (designated 18) consists of a projection or head portion on the forward arm of a lever that is pivoted at 18^a, said headed arm being normally pressed inward by a spring 18^b. The stop 18 is released from the shell by the descent of the shell-carrier, which has in its outer side a groove 10^k provided with an inclined or cam-like bottom that becomes shallower or vanishes at the top, said cam-like bottom working against a projection 18^c on said lever. When the stop 18 is thus actuated, the shell is released from the magazine into the carrier where it rests on the flexible support 10^s in the carrier, ready for elevation into position for loading.

To prevent the release of the cocked hammer until the gun is closed, that is, until the breech of the barrel is firmly against the standing breech with the barrel latched, a "safety-lever" 20 is pivoted at 20^a, said lever having at the right hand side of its lower end a lateral projection 20^b, that extends over the upper side of the trigger member 8, said lever being also provided at its left-hand side with a lateral projection 20^c. The lever 20 is also provided with a spring 20^d, working against a stationary pin 21, said spring tending to throw the lower end of the lever rearward, as seen in Figs. 9, 10, and 11. The projection 20^c extends into an elongated notch 22^a in the rear end of a rod 22, said rod sliding in a groove at the inner side of the left-hand side of the breech-frame. The rod 22 extends forward and is adapted to have its forward end projected into a square-cornered notch 5^c in the left-hand side of the barrel-latch only when that latch is engaged with the forward notch 2^c on the barrel. It will be observed that when the forward end of the rod 22 is engaged with the notch 5^c the latch and barrel are locked and that the gun cannot be opened until said rod is withdrawn. The rod 22 is directly operated by means of a spring-actuated lever 23, pivoted at 23^a on the frame in the rear chamber of the breech frame said lever having at its lower end a lateral projection 23^b, that engages a notch 22^b in said rod 22 (see Fig. 15). The spring 23^c and the lever 23 embrace a lateral pin 7^e on the left-hand side of the hammer 7, and the lever and spring are carried by the hammer when the gun is fired, thus releasing the rod 22 from the barrel-latch 5. The position of these parts immediately after the gun is

fired is indicated in Fig. 9. In Fig. 10 the sliding grip is depicted as moved forward far enough to disengage the barrel-latch. In Fig. 11 the grip is shown as having been carried forward to the limit (in ordinary operation) of the barrel's forward movement. The position of the parts when the hammer is cocked and the gun closed—in other words, ready for firing—is best seen in Figs. 2 and 4. The lever 20 may appropriately be nominated the "safety-lever," as will be hereinafter explained.

The extractor consists of a small lever 24, (see Fig. 20) pivoted at 24^a at the right hand side of the breech-frame and a little in rear of the standing breech, said lever having a hook that reaches around the forward side of the standing breech to engage the usual flanged rim of the shell, said lever being also pressed at its rear arm by a spring 24^b to yieldingly hold inward the hook engaging the rim. The extractor detains the empty or fired shell against the standing breech while the barrel is being moved forward to extract the fired shell and preparatory to its ejection.

The ejector 25 is located in the breech frame at its left-hand side and opposite the extractor, and the extractor coöperates with it to effect the removal of the empty shell. The ejector consists of a sliding pin 25 backed by a spring 25^a, that presses the pin forward; but the pin is limited in its outward movement by means of a cross-pin 26, passed through an elongated recess in the upper side of the pin. When the shell is against the ejector pin the latter is held depressed. The ejection of the shell is effected, as will be readily understood, by the release of the spring-pressed ejector pin 25 upon the depression of the carrier 10 to a point where it will not interfere with the passage of the shell out of the opening 1^e for that purpose at the right-hand side of the forward breech-frame chamber and when the grip and cocking-rod are moved forward to open the gun. The sidewise movement of the shell out of the chamber is due to the pressure of the ejector at one side while the extractor is engaging the rim of the shell at the other side.

Because the notch 22^a in the rod 22 is elongated the lower end of the safety-lever 20 is movable from the position seen in Fig. 4 that is, the position it occupies when the gun is loaded and capable of being fired.

In order to preclude accidental firing of the gun, a manually-operative slide 29 can be provided to act on the upper end of said lever 20, so as to displace the lower end and put it in position to prevent operation of the trigger. A bent spring 29^b coöperating with a pin 29^a on the slide, will serve to retain the slide in position to hold the safety device either in position to lock the trigger or

to permit its operation. To release the barrel after the gun has been cocked and before firing, as for the purpose of removing an unfired shell, the safety device can be manually withdrawn from the barrel latch by pressing rearward the thumb piece 22^e as shown in my former patent referred to.

Assuming that the gun has been fired (which act releases the barrel-latch lock 22) and the magazine supplied with additional loaded shells, the operation is briefly this: The forward movement of the grip first withdraws the barrel-latch then withdraws the barrel from the shell, and finally depresses the shell-carrier. The depression of the carrier and the withdrawal of the barrel from the shell permits the operation of the ejector and the release of a shell from the magazine. To reload and recock the grip is drawn rearward thus drawing rearward the cocking rod. The cocking rod elevates and locks in firing position the shell-carrier and restores the hammer to firing or cocked position. At the moment the barrel is closed against the standing breech the barrel-latch operates to latch it there and the safety-lever is drawn into position to permit the operation of the trigger. The closing of the gun also releases the rearmost shell in the magazine from the first stop to the second.

What I claim is:

1. In a fire arm, the combination of a breech frame, a barrel sliding therein, a grip sliding on the barrel, a reciprocable cocking rod operatively connected with the grip, a firing mechanism including a hammer and a cocking lever fulcrumed in the breech frame independently of the hammer said cocking lever being of hook form at its upper end to engage the hammer to cock the same and having its lower end located in position to be moved rearward by the rearward movement of the cocking rod, substantially as described.

2. In a fire arm, a firing mechanism including a hammer having a lateral pin and a cocking lever having an arm of hook form to engage said pin to cock the hammer and means adapted to be pressed rearward to operate on the other arm of said lever to cock the hammer.

3. In a fire arm in combination, a firing mechanism including a hammer, a cocking lever having an arm of hook form pivoted to the breech frame and adapted to act on said hammer and means adapted to be pressed rearward to operate on the other arm of said cocking lever to cock the hammer.

4. In a fire arm, in combination, a shell carrier, and a cocking rod, means on the cocking rod to engage the carrier for raising and lowering and holding the same raised and other means on the cocking rod for locking the carrier in raised position,

said two means on the cocking rod being located with reference to each other thereon so that when the cocking rod is reciprocated one means becomes engaged with the carrier before the other means becomes disengaged.

5 5. In a fire arm, in combination, a shell carrier having an angular groove in its side comprising a horizontal and an inclined
10 portion, a cocking rod having means thereon to engage said groove to lower, raise and hold raised the carrier, and other means on said rod to engage the carrier to lock the same in raised position, said two
15 means on the cocking rod being located thereon with reference to each other so that when the cocking rod is reciprocated one means becomes engaged with the carrier before the other becomes disengaged,
20 substantially as described.

6. In a fire arm, the combination of a shell carrier body, a vertically sliding shell support in said body, guiding and pivoting means for the rear of said support and a

spring forward of the said guiding and 25 pivoting means between the support and the carrier body.

7. In a fire arm the combination of a shell carrier body, a vertically sliding shell support in said body, guiding means for 30 the rear of said support said guiding means permitting a vertical oscillation of the forward portion of said support and a spring between the support and the carrier body. 35

8. In a fire arm, the combination of a shell carrier body, a vertically sliding shell support in said body, guiding means for the rear of said support, said guiding means permitting a vertical oscillation of 40 the forward portion of said support, a spring between the support and the carrier body, and a stop on the carrier to limit the upward oscillation of the carrier support.

JOHN E. MASON.

Witnesses:

GEORGE E. VICKERS,
BENJAMIN FINCKEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
