

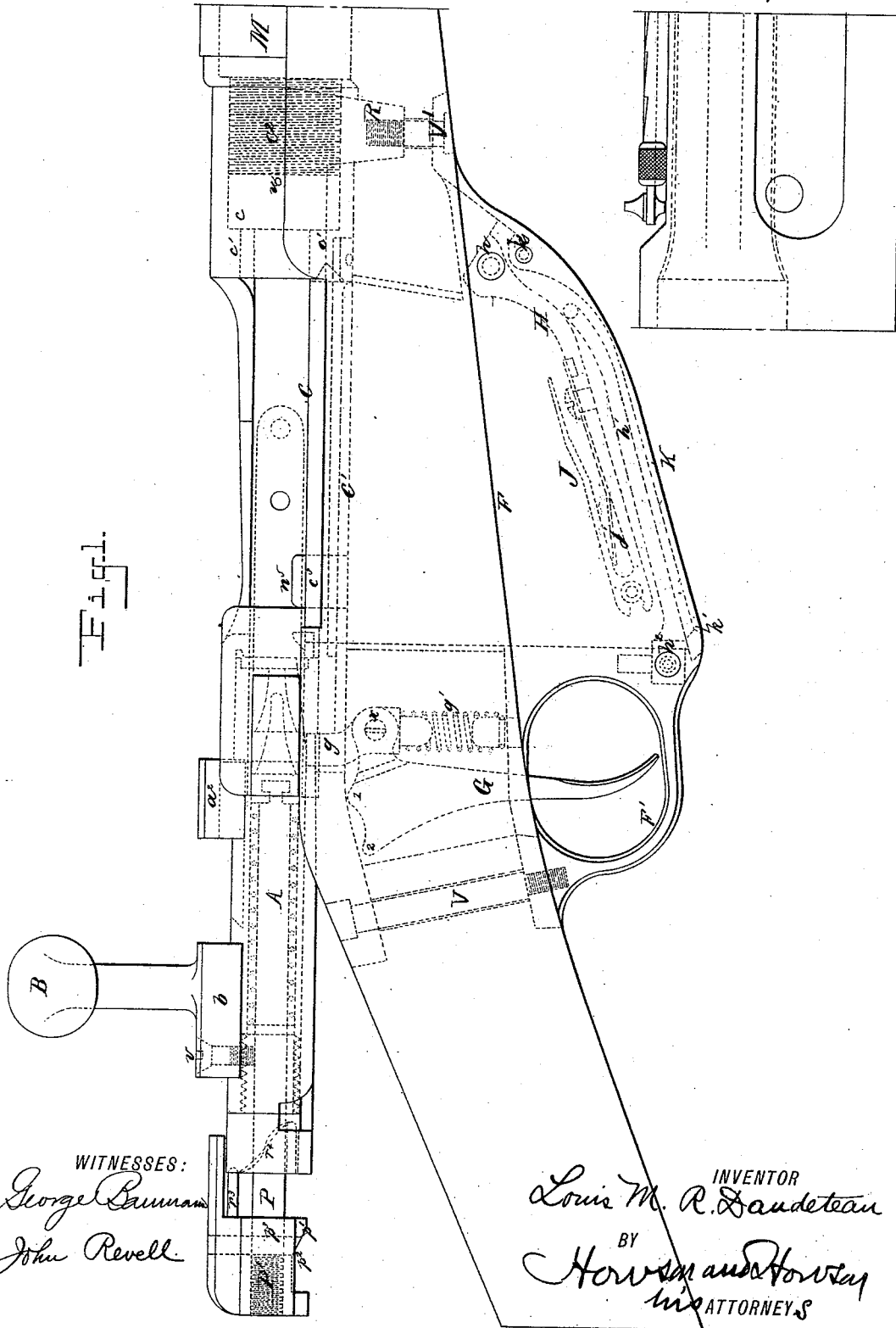
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5 Sheets—Sheet 1.

L. M. R. DAUDETTEAU.
MAGAZINE GUN.

No. 491,772.

Patented Feb. 14, 1893.



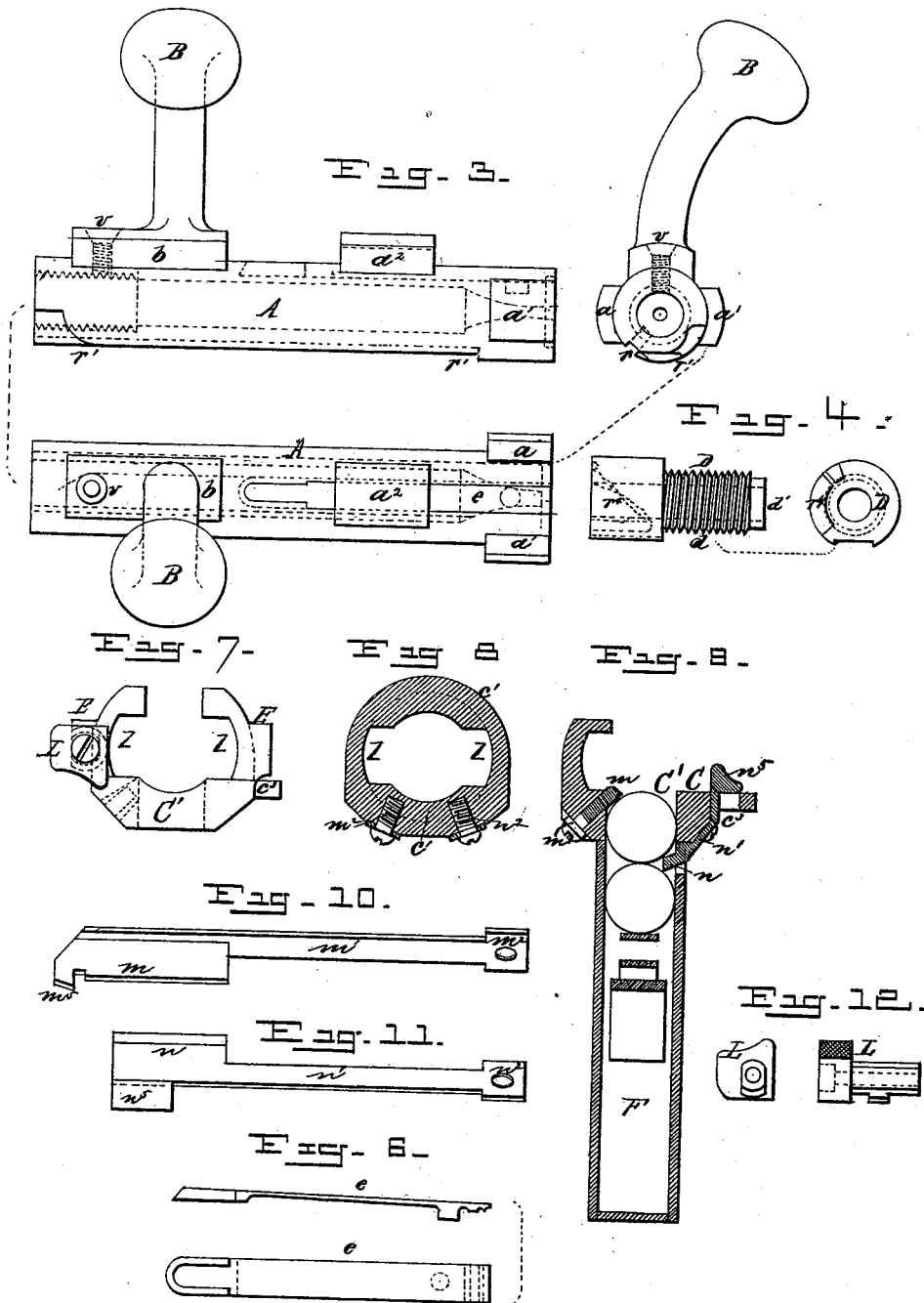
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L. M. R. DAUDETTEAU.
MAGAZINE GUN.

5 Sheets—Sheet 3.

No. 491,772.

Patented Feb. 14, 1893.



WITNESSES:

John Revell
George Baumann

INVENTOR
Louis M. R. Daudeteau

BY

Howden and Howden
ATTORNEYS

(No Model.)

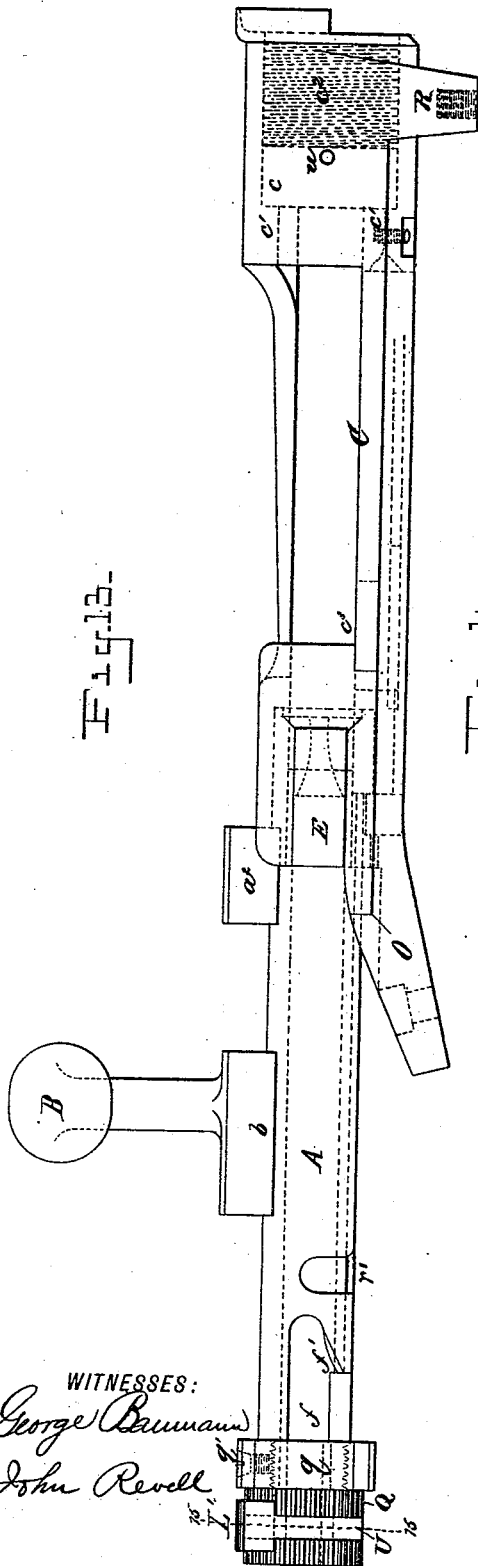
L. M. R. DAUDETTEAU.
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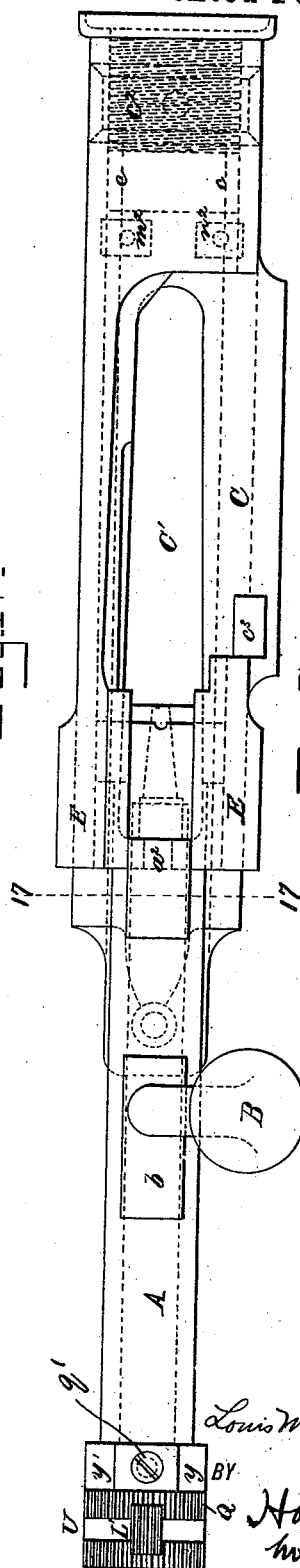
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Fig. 13-



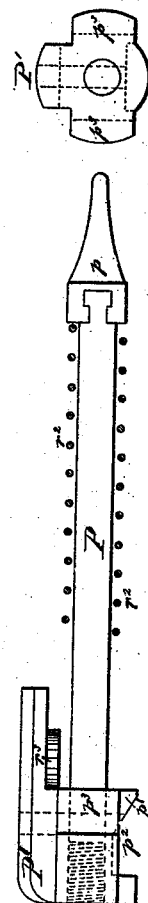
WITNESSES:
George Baumann
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Fig. 14-



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ATTORNEYS

Fig. 5.



UNITED STATES PATENT OFFICE.

LOUIS MARIE RENÉ DAUDETEAU, OF VANNES, FRANCE.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 491,772, dated February 14, 1893.

Application filed January 29, 1891. Serial No. 379,599. (No model.) Patented in England December 10, 1890, No. 20,185.

To all whom it may concern:

Be it known that I, LOUIS MARIE RENÉ DAUDETEAU, of Vannes, (Morbihan,) in the Republic of France, have invented Improvements in Repeating Small-Arms, (for which I have obtained a British patent, No. 20,185, dated December 10, 1890,) of which the following is a specification.

The repeating small-arm with the breech closed in two movements and magazine under the breech action forming the object of the present invention is distinguished by the following special arrangements namely: First. A movable or longitudinally sliding breech bolt made in one piece with symmetrical or equally distributed supports in front and a peculiarly arranged plug at the rear end with or without a safety bolt. Second. A trigger action made in two parts—the trigger and the sear nose—not attached to the receiver and working with a helical spring. Third. Spring stops for the cartridges and for releasing the same arranged to prevent the cartridges contained in the magazine from rising when not required. Fourth. A stop for the bolt formed by the sear nose so arranged that by pressing on the trigger the bolt can be drawn out and that this cannot be done when the sear nose is elevated. Fifth. A recoil block on the front part of the receiver. Sixth. A safety bolt attached either to the receiver or to the sliding breech bolt. Seventh. A peculiar action of the spring of the cartridge elevator and of the elevator itself. Eighth. A lateral vent communicating with the recess for the bolt.

In the accompanying drawings, Figure 1 represents in side elevation the breech action or mechanism of a repeating rifle according to my invention, the parts being represented with the sliding bolt drawn back so as to open the breech which can be closed by two movements. Fig. 2 represents the same in plan; Fig. 3 illustrates the sliding breech bolt or cylinder detached, in side elevation, in end elevation and in plan. Fig. 4 illustrates the breech bolt plug (hereinbefore referred to) in side and end elevation; Fig. 5 represents similar views of the firing pin; Fig. 6 represents the extractor in side elevation and plan. Fig. 7 illustrates the receiver viewed from the rear, and Fig. 8 represents this receiver in trans-

verse section, in the plane of the axis of the screw by which the ejector spring is attached. Fig. 9 represents the receiver in transverse section together with the cartridge magazine likewise in section; Fig. 10 illustrates the left hand magazine stop and ejector. Fig. 11 represents the right hand magazine stop, and Fig. 12 represents the safety bolt in end and side elevation; Fig. 13 represents a side elevation; and Fig. 14 a plan of a modified construction of the breech mechanism; Fig. 15 shows the lock L in its two positions, the views being sections taken on line 15—15 of Fig. 13. Fig. 15^a represents the lock apart from the gun; Fig. 16 represents a plan and end view of the modified form of the firing pin; Fig. 17 is a section taken on line 17—17 of Fig. 14; Fig. 17^a is a plan of Fig. 17; Fig. 18 shows a side elevation, a plan and a front end view of one form of breech bolt; Fig. 19 shows the movable ejector; Fig. 19^a represents the retaining spring; Fig. 20 is a view of a modified form of the magazine stop; Fig. 21 is a side sectional elevation of another form of breech bolt.

I will now describe the several constituent parts in succession as represented in Figs. 1 to 12.

The sliding breech bolt A (Fig. 3), made of one piece of metal, is provided with a hand lever B by means of which it can be caused to slide longitudinally in the direction of the axis of the barrel and to partake of rotary or rocking motion upon this axis. This bolt serving to close the breech is provided at its front part with two diametrically opposite wings or projections *a a'* situated in a plane perpendicular to that of the lever B. When the breech is completely closed, that is to say when the bolt has completed its rotary movement, these projections are placed vertically and are consequently engaged in circular parts or recesses *c*, Fig. 1, (and indicated by dotted lines in Fig. 8) which are situated in front of internally projecting flanges or shoulders *c'* provided in the receiver. The bolt A also carries a guide *a*² (Fig. 3) the base of which presents a passage for the extractor *e* while the front part guides the bolt in the plane of the recess or opening in the receiver. A block *b* on the upper side of the bolt and forming the base of the hand lever

B is traversed by a screw v serving to fix the breech bolt plug D (Fig. 4) in the rear end of the bolt and at the lower part of the bolt on the left hand side grooves r r' are provided.
 5 An ejector m^5 (Fig. 10) works in the groove r and a sear nose g (Fig. 1) works in the groove r' the end of the groove forming a stop acting on the front part of the said sear nose and serving to prevent the bolt from being acci-
 10 dentally drawn completely out of the receiver.

The fore end d of the plug D (Fig. 4) is screwed into the rear end of the bolt (Figs. 1 and 2) and the screw v in the base of the handle jams against the threaded part d so as to
 15 rigidly fix the plug in the bolt and cause it to partake of all the rotary and other movements of the latter. A central longitudinal passage in the axis of the bolt forms a cham-
 20 ber for the reception of a firing pin P represented detached in Fig. 5 and in dotted lines in Figs. 1 and 2.

The firing P (Fig. 5) is made in one piece with a hammer P' and is connected at its
 25 front extremity to a firing pin p by means of an under-cut or T-shaped tongue and groove. A helical spring n^2 wrapped round this firing pin bears at one end against a shoulder
 30 formed by the pin p and at the other end against the plug D (see dotted lines in Figs. 1 and 2.)

The hammer P' fixed on the firing pin is provided with a helical incline n^3 ; and a corresponding incline n^4 is provided on the plug
 35 D (Fig. 4) so that the rotation of the latter with the bolt presses back and cocks the hammer and firing pin. On its under side the hammer is provided with a projection or tooth
 40 p' which when the hammer is cocked bears against the sear nose g and behind this tooth there is a recess for the reception of the sear nose after the hammer has been released in firing. Lateral projections p^3 are formed on
 45 the sides of the hammer so as to stop up or close the ends of the grooves in the receiver into which they enter when a shot is fired. The left hand projection p^3 may also be ar-
 50 ranged to bear against a safety bolt L (Fig. 12) attached to the side of the receiver (Figs. 2 and 7) so that when the breech is closed and the hammer cocked the rifle cannot be
 55 made to go off even by pressing on the trigger until this safety bolt L has been turned outward or removed from its position in front of the projection on the hammer.

The receiver is perforated from one end to the other by a suitably bored and dressed bed for the reception of the sliding breech bolt A. In the two opposite sides of this bed
 60 there are grooves Z for the passage of the lateral projections a a' on the bolt. These two grooves are open at the rear ends and at the front they communicate with the circular grooves c c' which enable a rotatory mo-
 65 tion of the bolt to bring the projections a a' in front of the internal projections or shoulders c' c' hereinbefore referred to and indi-

cated in dotted lines in Fig. 1. Screw threads c^2 (Fig. 1) connect the barrel to the receiver and determine with precision the positions of
 70 the recesses for the projections on the bolt.

The right hand side of the bed or recess for the sliding breech bolt is cut away at C (Figs. 1, 2 and 9) for the purpose of facilitating the
 75 introduction of the cartridges into the receiver and the ejection of the hollow cases or removal of entire cartridges if required.

An opening C' in the bottom of the bed (Figs. 1, 2, 7 and 9) connects the magazine in the trigger guard with the receiver and en-
 80 ables the cartridges to be passed up from the said magazine into the space in front of the sliding bolt by the action of the cartridge elevator as hereinafter described.

The flat part or edge of the depression C in
 85 the side of the receiver is extended or overhangs as far as the outside edge of the wood or stock and forms a rib which is perforated by an opening c^3 (Figs. 1, 2, 7 and 9) for the
 90 passage of the nose n^5 of the lower spring stop nn' acting on the cartridges in the magazine. An opening for the passage of the sear
 nose g (Fig. 1) is formed in the plane of the axis in the bed of the bolt.

At the rear extremity of the receiver there
 95 are two external enlargements E (Figs. 2 and 7), one of which (on the left hand side) is perforated with a hole drilled parallel to the axis of the gun, for the reception of the pivot of
 100 the safety bolt L (shown detached in Fig. 12) which is maintained in position by a spring 4 (Fig. 2) attached to the breech case. This safety bolt when rocked outward frees the
 105 orifice of the left hand groove Z in the receiver and consequently enables the hammer to slide forward when the trigger is pulled. On the other hand when the safety bolt is
 110 rocked inward it obstructs the passage of the projection p^3 on the hammer. The spring 4 bears upon flats formed on the spindle so as to retain the bolt in its two positions.

In the interior of the receiver over the magazine there are two projecting magazine stops
 115 m and n (shown separately in Figs. 10 and 11) connected respectively to springs m' and n' attached to the case at m^2 n^2 (Figs. 2, 8 and 9). One of these stops namely the stop m (Fig. 10) carries the ejector m^5 and is inclined at
 120 an angle of about forty-five degrees so as to project above the top cartridge in the magazine as represented in Fig. 9 and prevent it from rising irregularly at the time of the
 brusque opening of the bolt. The other stop
 125 marked n prevents the elevator from pushing against the cartridges until a projection n^5 (Fig. 11) on the spring passing through the orifice c^3 (Fig. 9) has been depressed either by
 130 hand or automatically by the base b of the lever B in the second or rotary motion completing the closing of the breech. This second stop consequently serves to prevent a second cartridge from rising and presenting
 itself in front of the completely drawn back bolt when a cartridge has been previously in-

introduced into the chamber and has remained there owing to an incomplete forward movement of the bolt. These spring stops *m* and *n* are pushed aside by the introduction of the
 5 cartridges into the magazine, but do not permit the cartridges to get out without being pushed forward by the bolt, or by hand. A cartridge never passes over the stop *m* in a
 10 perpendicular plane, but slides diagonally from beneath it. When the empty case is ejected the end of the top cartridge projects up into the path of the bolt enough to be
 15 pushed forward from under the stop *m* into the chamber. The second cartridge cannot, however, rise to the place between the stops
 20 *m* and *n* until the bolt has been completely closed, that is, at the end of the rotary movement of the bolt when the base *b* presses on the projection *n*⁵ and pushes the spring *n*
 25 aside. The arrangement is such that the extractor *e* always engages the rim of the cartridge when the base *b* of the lever *B* acts upon the projection *n*⁵ on the spring *n*¹ in order to push aside the magazine stop *n* and
 30 thus enable the cartridge in the magazine to be raised in turn until it is brought in front of the bolt.

The two stops *m* and *n* while retaining the cartridges in the magazine do not oppose their
 35 introduction being retained by springs capable of yielding to pressure. In brief the functions of the two spring stops *m* and *n* are as follows:—First. To retain the cartridges in the magazine all the force or thrust exerted
 40 by the elevator being supported by the stop *n*. Second. To regulate the feed of the cartridges in such a manner that two cannot present themselves together for entering the receiver. Third. To eject the cartridge cases
 45 removed from the receiver.

It will be seen that if the bolt is not drawn back sufficiently to eject the empty case, the top cartridge could not project up enough to be taken by the bolt at the next closing; also
 50 that if the bolt is not completely closed the cartridge below the stop *n* cannot rise,—thus avoiding double repetition from either an incomplete backward or incomplete forward movement of the bolt.

The receiver is completed by a tang, a recoil block *R* and a vent *u* (Fig. 1). A screw
 55 *V* (Fig. 1) passed through the tang connects the receiver and the trigger guard plate to the stock. The block *R* in front of the receiver receives a screw *V*¹ which holds the front end of the guard plate. The vent *u* (Fig. 1) places the recess *c* in communication with the exterior and serves to provide an easy escape for any gas that may penetrate into this
 60 recess when a cartridge case bursts accidentally.

The trigger mechanism is composed of three parts namely a trigger *G* (Fig. 1) a helical spring *g*¹ and the sear nose *g*. The sear nose
 65 and the trigger which is provided with two suitable lugs are connected by a pin or pivot *x*. The spring *g*¹ is retained between the sear

nose and the trigger guard plate by means of studs or projections which enter the coils of the spring as represented in the drawings. 70 The trigger *G* is provided with two bearing surfaces 1 and 2 bearing against the under surface of the receiver plate and on which it rocks in succession when pressed by the finger. This movement of the trigger compresses 75 the spring *g*¹ and pulls down the sear nose *g* which is guided in the opening in the receiver. The sear spring *g*¹ tends to push up the sear nose and causes it to project into the recess or bed in the receiver. 80

The cartridge magazine is composed of a metal box *F* forming part of the trigger guard plate and which being introduced from below the stock fits with its edges against the under side of the receiver (Figs. 1 and 9) opposite 85 the opening *C*¹ in the latter and is secured by the screws *V* and *V*¹. It forms with the receiver a structure independent of the stock which may even be dispensed with without interfering with the action of the mechanism. 90 In connection with the stock it may be observed that it is provided with a raised part *M* (Figs. 1 and 2) which partly surrounds the barrel from the receiver to the strap of the fore end without covering or obstructing the 95 back sight thus enabling the barrel to be grasped with the bare hand even during the most rapid fire.

At the rear of the magazine is the trigger guard proper *F*¹ surrounding the trigger *G*. 100 At the bottom of the magazine there is an elevator *H* (Fig. 1) rocking on an axis *h* and acted upon by a spring *h*¹ attached to the trigger guard plate by a block *h*². On this elevator is hinged a cartridge trough *J* acted on 105 by a spring *j* attached to the elevator. The bottom of the magazine is closed by a plate *K* hinged at one end on a pin *k* and supported at the other by a dovetail *k*¹. The cartridges are introduced into the magazine through the 110 opening *C*¹ by depressing the elevator. They can be introduced by means of a charger of any suitable construction.

Having thus described a typical arrangement of the mechanism I will now proceed to 115 describe certain modifications which may be made in some of the parts.

The sliding breech bolt in place of terminating in the plug *D* as hereinbefore described may be arranged as represented in side elevation and in plan in Figs. 13 and 14 respectively, being provided with a threaded part *q* 120 engaging with a head *Q* rigidly attached to the bolt by a set screw *q*¹. This bolt may also be provided at its rear end with a slot *f* 125 and a helical incline *f*¹ with which engages a projection or tooth *t* on the firing pin, the tooth being formed with a corresponding incline as represented in side and end elevation in Fig. 16. 130

On the stem of the firing pin *P* (Fig. 16) there is a sleeve *N* slotted longitudinally for the passage of the nose *t* and forming a bearing for the spring *n*² wrapped around the said

stem. When the head or plug Q is screwed home it pushes the sleeve along the stem to a distance sufficient to give the necessary initial compression to the spring r^2 . When the bolt is pushed forward the tooth t of the firing pin comes in contact with the sear nose g and the rotary motion completing the cocking of the firing pin (the said tooth t being brought opposite to the slot f), the arm is ready for firing by acting on the trigger. - A groove O (Fig. 13) in the rear part of the receiver affords a passage for the tooth t on the firing-pin and at the same time serves to retain it in one position during the rotation of the bolt. By these means it is compelled to move back over the incline f' which places it in the cocked position. The safety bolt in place of being attached to the receiver may be situated on the sliding bolt as represented in Figs. 13, 14 and 15 and 15^a. According to this arrangement the head Q attached to the bolt and perforated for the passage of the striker presents two milled surfaces separated by a circular spring U (Fig. 15) contained in an annular recess in the head Q and acting on a safety bolt L' which is pivoted in a recess in the said head. By pressing on a milled projection on this bolt it can be rocked in a plane perpendicular to the axis of the sliding breech bolt. When pushed over in one direction the tail of the safety bolt projects inwardly and engages with a recess z (indicated in dotted lines in Fig. 16) in the stem of the firing pin which is thereby rendered immovable so that the shot cannot be fired until the safety bolt has been pushed over so as to disengage the firing-pin. The head Q may also be provided with two projections $y y$ (Figs. 13 and 14) at right angles to the projections $a a'$ which are provided at the fore end of the breech bolt as hereinbefore described. These projections $y y$ when the breech bolt is in position for closing the breech engage with a recess Z (Fig. 17) so as to close the lateral grooves in the breech case in such a manner as to prevent any gas that may accidentally penetrate into these grooves from blowing out in the face of the marksman.

The bolt plug or head may be dispensed with altogether as in the arrangement illustrated in Fig. 21 in section the bolt itself being prolonged at the rear sufficiently to form the helical incline r^4 which acts in combination with the incline r^3 on the hammer P' for the purpose of cocking the latter. In order to facilitate the introduction of the firing-pin and of its spring which in this case cannot be introduced from the closed rear end of the sliding breech bolt, there is provided at the front end of the bolt a removable head T² which is attached under the projection a^2 by means of a screw v' . This removable head carries an extractor e and an ejector i^a hereinafter more fully described) and the two lateral projections $a a'$ represented in end elevation in Fig. 18.

The ejector i^a represented separately in

Fig. 19 may be attached to the bolt as represented in Fig. 18 in place of being attached to the receiver as in the arrangement hereinbefore described. In this case the front end of the groove r' in which the sear nose works is formed with a dovetailed or undercut part terminating in a cylindrical hole or passage o' in which works the ejector i^a . A spring r^a (Fig. 19^a) closes the dovetail and prevents the ejector from falling out at the same time permitting of a certain amount of play in a longitudinal direction. On drawing back the sliding bolt A to open the breech the sear nose g strikes against the rear end of the ejector i^a and causes its point or extremity to protrude in such a manner as to effect the ejection of the case. In closing the breech the protruding extremity of the ejector comes in contact with the fresh cartridge which has been pushed up out of the magazine and is pushed back into its recess when the bolt completes its forward motion.

In order to prevent a fresh cartridge from being pushed up before the preceding cartridge has been completely ejected the top cartridge is retained or held down by the left hand retaining spring which with this object may assume the modified form illustrated in Fig. 20. The effect of this arrangement is that so long as the stop m projects into the breech case the base of the cartridge cannot be sufficiently elevated to be acted on by the bolt. On the other hand when the left hand projection on the bolt presses upon a tooth m^3 , projecting into the corresponding groove in the breech case, the stop m moves back and the cartridge is free to rise up in front of the breech bolt. The tooth m^3 is so arranged that the left hand projection on the bolt acts upon it precisely during that surplus part of the movement described by the bolt in moving backward from the point where the ejector commences to be acted on by the sear nose. Above the stop m there is a counter stop even with the lower part of the left hand groove in the breech case and carried by a spring specially provided or dependent on the spring stop $m m'$. This counter stop is employed for the purpose of preventing the cartridge from being jerked out accidentally and retains it correctly in position in front of the bolt. It is consequently impossible for two cartridges to be fed up at once during the backward motion of the sliding bolt as the cartridge in the magazine cannot be pushed up until the empty case, withdrawn from the receiver, has been ejected. It is evident that this modified arrangement with a movable ejector is not necessary except when the diameter of the base of the cartridge does not allow of the employment of the ejector of the type fixed to the case. When the said base is smaller than or too nearly equal to the diameter of the recess of the firing pin, it would become necessary, were the other arrangement adopted, to cut the bolt from one end to the other in forming the groove for the passage of the ejector. This

would complicate the construction and reduce the strength of the bolt.

I claim as my invention:—

1. In a repeating fire-arm, the combination
5 of a receiver and a movable breech-bolt having a hand lever, with a magazine and spring-stops *m* and *n* at the entrance to the magazine, the said stops *m* and *n* being adapted to be actuated by the ejector and the base of the
10 hand lever respectively, as and for the purpose set forth.

2. In a repeating fire-arm the receiver and movable breech-bolt therein in combination with a magazine opening into the receiver and
15 two spring stops at the opening of the magazine, one stop above the first cartridge and the other between the first and second cartridges, a movable ejector, and means for operating the said stops, all substantially as and
20 for the purposes set forth.

3. In a repeating fire-arm, the combination of a receiver having an opening *C'*, with a

magazine attached to the underside of the receiver, and forming part of the trigger-guard, an elevator with trough *J* in the magazine, a
25 movable breech bolt with a hand-lever, an ejector and stops *m* and *n* operated by the ejector and the base of the hand-lever respectively, all substantially as and for the
30 purposes set forth.

4. In a repeating fire-arm, the combination of a receiver provided with an opening *C'*, a magazine having its entrance below the said opening, the said receiver provided with a circular groove *c* having a vent *o* and a recoil
35 block *R*, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS MARIE RENÉ DAUDETEAU.

Witnesses:

ALBERT ROBIN,
LÉON CRANE KENT.