

(No Model.)

2 Sheets—Sheet 1.

U. MARGA.
MAGAZINE BOLT GUN.

No. 515,348.

Patented Feb. 27, 1894.

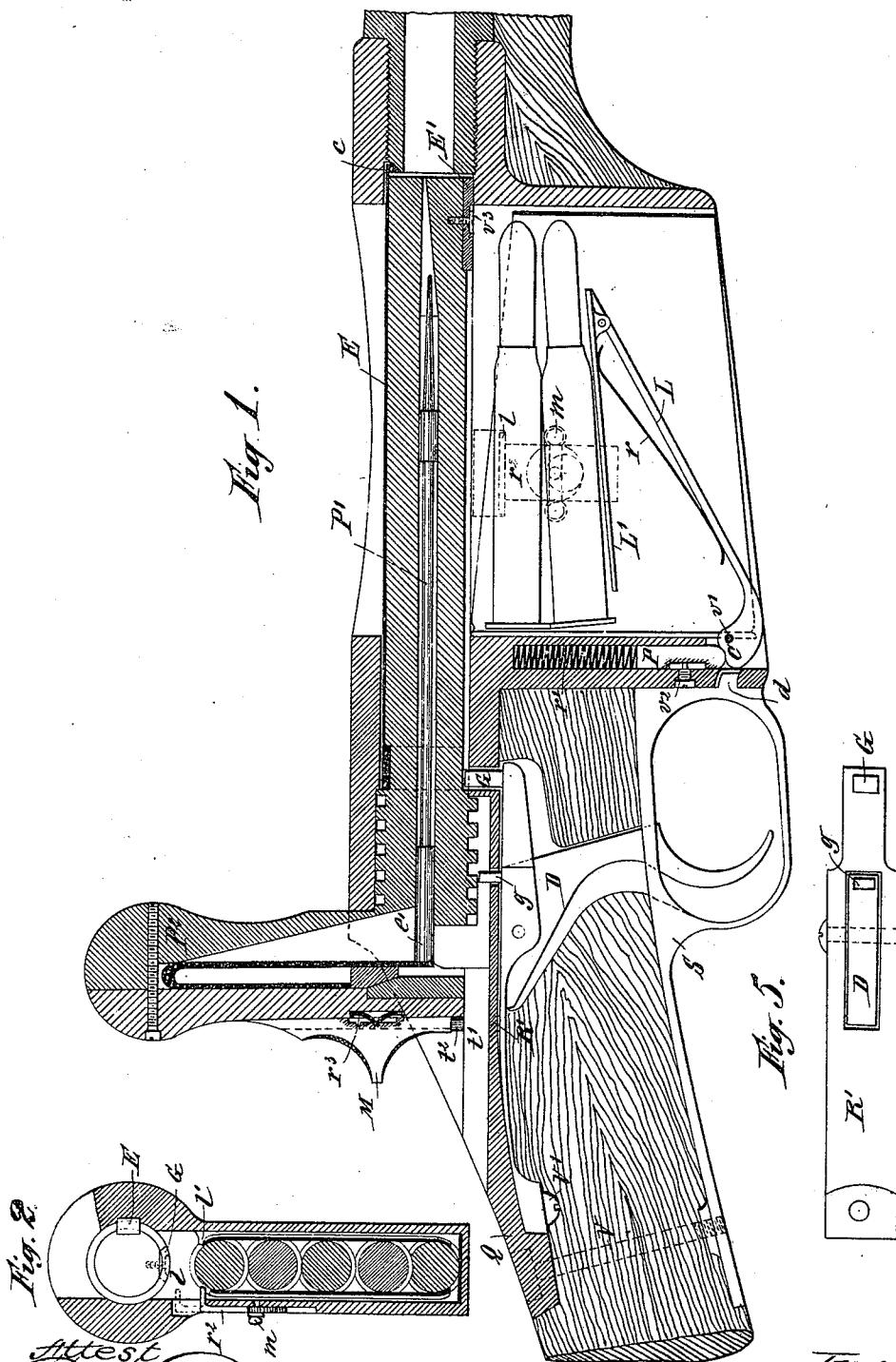


Fig. 2.

Fig. 1.

Fig. 5.

Attest
M. L. Madsen
J. L. Madsen

Inventor
Uldarique Marga
by Richard H. Co
ATTYS

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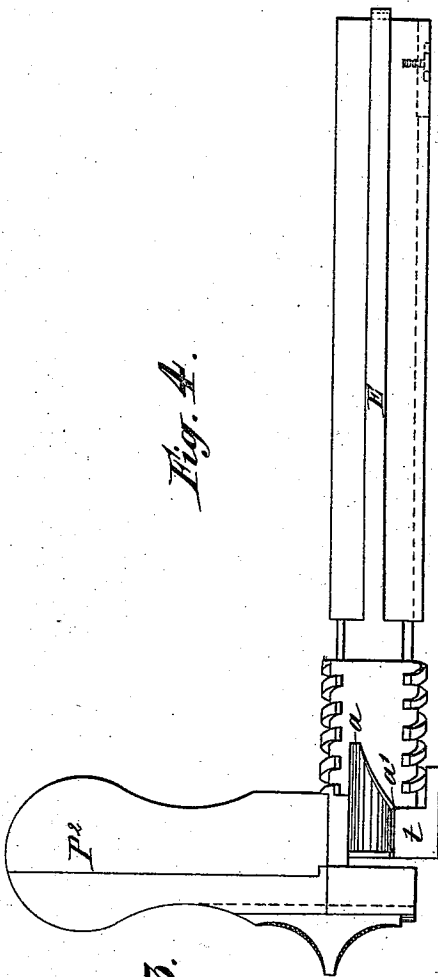


Fig. 4.

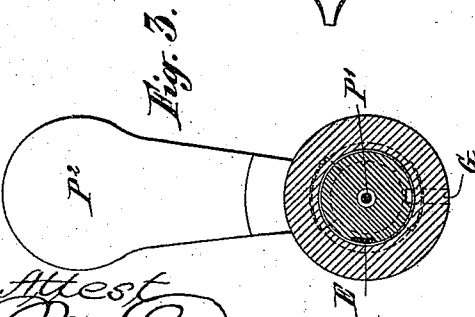


Fig. 3.

Attest
Malvern Madsen
J. L. Middleton

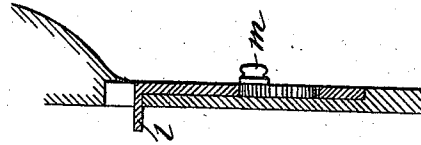


Fig. 9.

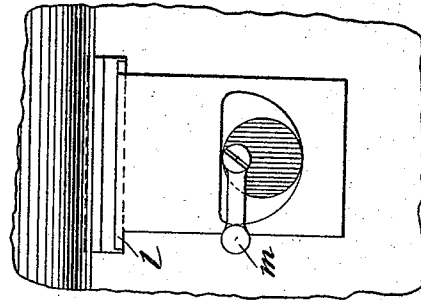


Fig. 8.

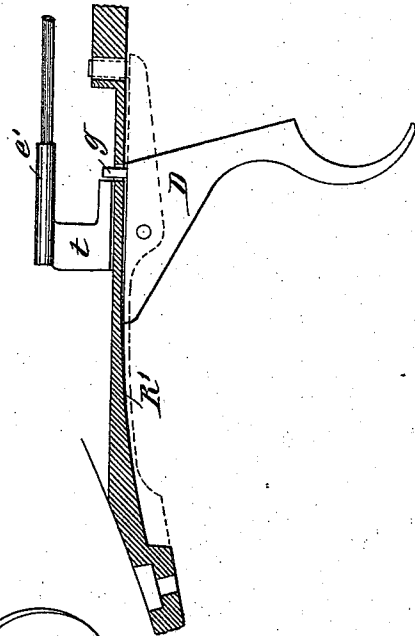


Fig. 7.

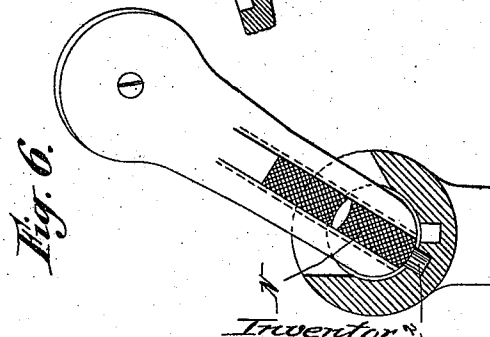


Fig. 6.

Inventor
Uldarique Marga
By Richard & Co
ATTYS

UNITED STATES PATENT OFFICE.

ULDARIQUE MARGA, OF BRUSSELS, BELGIUM.

MAGAZINE BOLT-GUN.

SPECIFICATION forming part of Letters Patent No. 515,348, dated February 27, 1894.

Application filed January 27, 1892. Serial No. 419,481. (No model.)

To all whom it may concern:

Be it known that I, ULDARIQUE MARGA, lieutenant of infantry, of 57 Rue St. Georges, Brussels, in the Kingdom of Belgium, have
5 invented new and useful Improvements in Repeating or Magazine Firearms, of which the following is a specification.

My invention relates to repeating or magazine fire-arms.

10 The repeating or magazine fire-arm which forms the subject of my said invention belongs to that class in which the charge, ordinarily consisting of five cartridges is rapidly renewed by introducing into the breech from
15 above, a loader containing five cartridges which, as they descend in the magazine provided on the under side of the breech, depress an elevator which automatically moves a cartridge into the breech at each operation
20 of the breech bolt.

My improvements relate more especially to the breech bolt, the means for dismounting it, the safety device and the device for stopping the repetition.

25 In the accompanying drawings, Figure 1 is a longitudinal section of the whole mechanism through the axis of the fire-arm; Fig. 2 a transverse section through the charge; Fig. 3 a transverse section showing the device for
30 locking the breech bolt; Fig. 4 a side view of the breech bolt and its locking device; Fig. 5 a plan of the detent and device for stopping the breech bolt. Fig. 6, is a detail view of the safety lock. Fig. 7, is a detail view of
35 the trigger part of the firing pin and some of the adjacent parts. Figs. 8 and 9 are detail views of the device for stopping the repetition.

In the improved fire-arm the receiver and
40 magazine are made of a single piece in the sense that the four vertical walls of the magazine extend downward directly from the receiver so as to surround the aperture necessary for the upward movement of the cartridges,
45 and to strengthen the receiver weakened by this aperture, the bottom of the magazine being subsequently fastened to the four walls. In front of the magazine the receiver ends in the ordinary tapped socket into which the barrel is screwed, and immediately at the rear
50 of the magazine the receiver terminates in a closed socket or cylinder in which the

breech bolt is locked so that the breech is very short and compact for this kind of fire-arm. The cylindrical rear part of the receiver extends obliquely downward and terminates
55 below in a tail-piece Q which is sunk into the stock of the fire-arm, and is traversed by a screw the extremity of which engages with the prolongation of the trigger guard S also
60 embedded in the stock and having on the front part a lug or tappet d engaging with a notch or hole in the rear side of the magazine. In front of the magazine which extends
65 through an aperture in the stock, the latter is connected with the barrel by ordinary rings, so that it will be sufficient to loosen the screw V and the said rings for dismounting the metallic part, although this connection is very firm.

70 As in all fire-arms of the kind the magazine is of sufficient capacity for receiving five cartridges which are pushed upward toward the breech by the elevator consisting of a lever
75 L to the upper extremity of which is articulated a plate L' which under the action of a spring r fixed upon the said lever L will always occupy a horizontal position so that it cannot pass beyond this position in the upward direction, because the extremities of the
80 plate L' and lever L come in contact, while the plate on which the cartridges are put can yield under the pressure of the same in the downward direction and thus follow all the inclinations imparted to it by the lower cartridge which is in direct contact with it. The
85 lower extremity of the said lever L terminates in a cam pivoted in the magazine upon a bolt in such a manner that the lever can be oscillated at will in the magazine. Upon the cam
90 c bears the lower rounded extremity of the piston P under the action of a spiral spring r' which constantly tends to press it downward, the said piston being placed in a hole in the rear part of the magazine and guided
95 by means of a groove and pin which also prevent it from leaving the hole when the elevator is withdrawn from the magazine. This arrangement has for its object to obtain a strong elevator no part of which shall make
100 constrained movements or be liable to get out of order. When everything is in its place for the firing the elevator L L' pushes the cartridge upward so that the first is put

against two strips ll' which are arranged at different heights in the receiver and thus enable the cartridge to be moved a sufficient distance for being taken along by the bolt when the latter is pushed forward and being introduced into the chamber of the barrel. The position of these strips is shown in Fig. 2, the position of the strip l shown in dotted lines, that is to say the upper position being that for the firing. For stopping the repetition it is sufficient to lower the strip as shown in full lines which prevents the passage of the cartridge. In order to enable the said strip l to be raised and lowered at will it extends at a right angle from a vertical slide r^2 arranged in a slot in the side of the magazine wherein it is displaced by means of an eccentric turned in one or the other direction by the aid of a small crank m .

In the construction of the breech bolt adapted to be locked at the rear by means of interrupted screw threads formed in the cylinder terminating the receiver all the conditions of strength are rigorously observed in the sense that in front of the locking device there is no break of continuity in the metallic wall either in the transverse or in the longitudinal direction. These advantages are obtained by the particular construction and arrangement of the firing pin P' and of the cartridge extractor E . The firing pin is a simple needle having a cylindrical shoulder e in front and a second cylindrical shoulder e' at the rear, which are guided in the uniform axial hole in the breech bolt wherein it is actuated by means of a spring R bent upon itself and provided in the handle P^2 adapted to be taken to pieces, the front part of the said spring acting upon the shoulder e' of the needle. Instead of being combined with a sear extending into the bolt and thus necessitating a break of continuity in the metal, the said needle is provided at the shoulder e' with a nose t forming a square, which projects outside the bolt through a special aperture behind the locking device, and the horizontal arm of which is parallel with the exterior of the bolt below the screw threads of the locking device. These are diametrically opposite each other and occupy a quarter of the circumference of the bolt and of the cylinder terminating the receiver, in which they are formed on the sides symmetrically to the axis, while they are interrupted above and below so that the threads on the bolt engage therewith when it is pushed home against the breech end by the turning of the handle P^2 to the right while they can pass between the screw threads in the breech when the bolt is unlocked by moving the handle back to the vertical position as shown in Fig. 1, the downward and upward movements amounting to a quarter of a turn.

The form of the aperture in the breech bolt through which the nose t projects is shown in Fig. 4. It has two rests a a' one in front and the other at the rear, is straight one side while

it forms an incline extending as a portion of a spiral from the rest a to the rest a' and terminates behind the latter in a straight line to leave room for the nose t . As the latter is guided in the lower groove t' in the breech, it always remains in a fixed position while the breech can turn upon the firing pin P' in one or the other direction. If under these circumstances I suppose the firing pin thrown forward and therefore the nose t placed in front of the rest a it will recoil by sliding upon the incline putting the spring R under tension and passing behind the rest a' when the handle P^2 is raised to the left for unlocking the breech bolt which is thus cocked at the same time and the firing pin is maintained in this position until the nose shall again be placed so that it can be thrown forward by the spring R . This happens when the bolt on being pushed home is turned to the right in order to be locked, because then the rest a' leaves the nose t against which moves the straight side of the aperture in the bolt and the firing-pin can then be thrown forward if, by pushing the bolt home, the nose has not been placed in front of the stop g which it is then sufficient to draw back for firing the cartridge.

A guide G of square section is placed at a suitable distance upon the reinforced front part of the spring R' fixed at its rear extremity upon the tail-piece of the breech by a screw V' . The spring R' receives in its longitudinal opening the trigger D carrying the stop g and articulated in the spring which is lowered when the trigger is sufficiently pressed, its rear extremity forming a lever support upon the breech. The guide G is higher than the trigger and it projects through the metal of the breech into a longitudinal mortise in the breech bolt commencing at the screw-threads of the locking device and terminating at a certain distance from the front extremity of the bolt of which it thus limits the movement to the rear, the end of the mortise stopping upon the guide G ; but it is easy to see that as soon as the guide G is lowered by sufficiently pressing the trigger it will enter the metal of the breech and permit the passage of the bolt which can thus be removed and again introduced at will.

In order that the guide G shall not prevent the partial rotations of the bolt from right to left the mortise is continued circularly at its rear extremity and thus serves at the same time as a stop for the transverse nose of the cartridge extractor E (constituting a simple rod with a hook e in front) and placed longitudinally upon the breech bolt, being guided in a mortise formed in the lateral metal of the breech so that the bolt is rigidly guided both above and below. For the breech bolt to have ample strength I give it the required thickness of metal between its axial opening and the bottom of the mortises by augmenting this thickness by the height necessary for the mortises, the bolt may then have any suit-

able diameter, in which the circular mortise terminating the longitudinal mortise has the double duty of permitting the bolt to perform its rotary movements above the guide G and the transverse nose of the extractor, both being fixed with regard to the circular movements of the breech bolt.

The mortise and the guide G have other uses than that of the stoppage and guiding of the bolt namely that which has reference to the ejector E' of extremely simple and efficacious construction. The front part of the breech bolt is provided with a recess or opening v^4 . In this opening I arrange to slide freely the ejector E' which has in the middle a groove provided above the screw v^3 preventing the ejector from leaving the space assigned to it, and limiting its movement to the front and to the rear. When under these circumstances the bolt is locked, the ejector being placed against the base of the cartridge, recoils so that its rear extremity is projected into the mortise of the guide G; but when the cartridge has left and the bolt together with the cartridge case are thrown violently backward, the rear extremity of the ejector strikes the guide G, thus advancing suddenly into the space provided for it and throwing by its front extremity the case sidewise to the outside of the breech. This arrangement of the ejector is evidently as simple as it is practical and strong, and all its movements are automatic.

It remains to describe the safety device provided on the rear surface of the handle P² and comprising a slide having a dove-tail base, adapted to move in a corresponding guide in the handle made in one piece with a milled projection or finger M and terminating below in a tenon t^2 which can engage with a corresponding notch or recess in the breech when the bolt, although pushed home, is for example moved only one-sixteenth of a turn. Under these conditions, even if the firing pin could advance by pulling the trigger the needle would not reach the bottom of the cartridge. The tenon or the slide is retained in its upper position by a spring r^3 which is provided in a recess in the slide in order that it shall not unexpectedly stop the bolt by descending automatically. It should be observed that the only open break of continuity in the bolt is that through which the nose t projects the two other mortises do not affect the thickness of the metal necessary for the solidity of the bolt. As the first is situated behind the locking device it cannot have any influence, either injurious or beneficial, upon the said solidity.

What I claim, in a repeating or magazine fire-arm having a loader and a breech-bolt adapted to be locked at the rear by interrupted screw threads, is—

1. In combination the magazine and receiving chamber, the rotary bolt having the interrupted screw threads and the recessed handle

at the rear end, the said recess in the handle being continued through the bolt to the lower side thereof and in rear of the screw threads, the said recess being continued also forwardly between the interrupted screw threads to form the inclined shoulder, the firing pin in the bolt having the rear nose, said nose projecting through the recess in the bolt to engage the inclined shoulder, and the spring in the handle engaging the firing pin, substantially as described.

2. In combination the frame of the receiver, having a groove or mortise to receive the extractor, the extractor E having a nose at its rear end, and the breech bolt arranged to be rotated, said bolt having a peripheral recess or mortise, to receive the nose of the extractor, the said peripheral groove allowing the bolt to be rotated and causing the operation of the extractor when the bolt is moved, substantially as described.

3. In combination the receiver having a mortise, the rotary bolt having a longitudinal groove and a peripheral groove, the ejector at the forward end of the longitudinal groove, the extractor in the groove of the receiver having a nose, the guide G, said nose and guide being arranged to project into the peripheral groove and the latter being arranged to work in the longitudinal groove, the firing pin having the projecting nose, the trigger, the gear carried thereby to engage the said nose, and the connection from the guide G to the trigger, substantially as described.

4. In combination the breech bolt, the ejector, the guide G, the trigger having the sear g , and the spring R' having the said guide G thereon and having the trigger pivoted thereto, substantially as described.

5. In combination the rotary breech bolt, the firing pin carried thereby, the locking means for the bolt, the handle P² for turning the bolt, and the safety device, consisting of the slide having the tenon t^2 and carried at the rear of the breech bolt, and adapted to engage a recess in the receiver when turned partially toward locked position, substantially as described.

6. In combination with the magazine, the means for stopping the repetition, comprising the plate l , and the means for adjusting the same in relation to the magazine, consisting of the cam arranged in an opening in the plate and the lever for operating the cam, substantially as described.

7. In combination the magazine, the receiver, the breech bolt and the two plates in the magazine having their upper ends bent toward each other, one of said plates being adjustable, and the adjusting means therefor, substantially as described.

ULDARIQUE MARGA.

Witnesses:

AUG. JOERISSEN,
JOSEPH GOFFIN.