

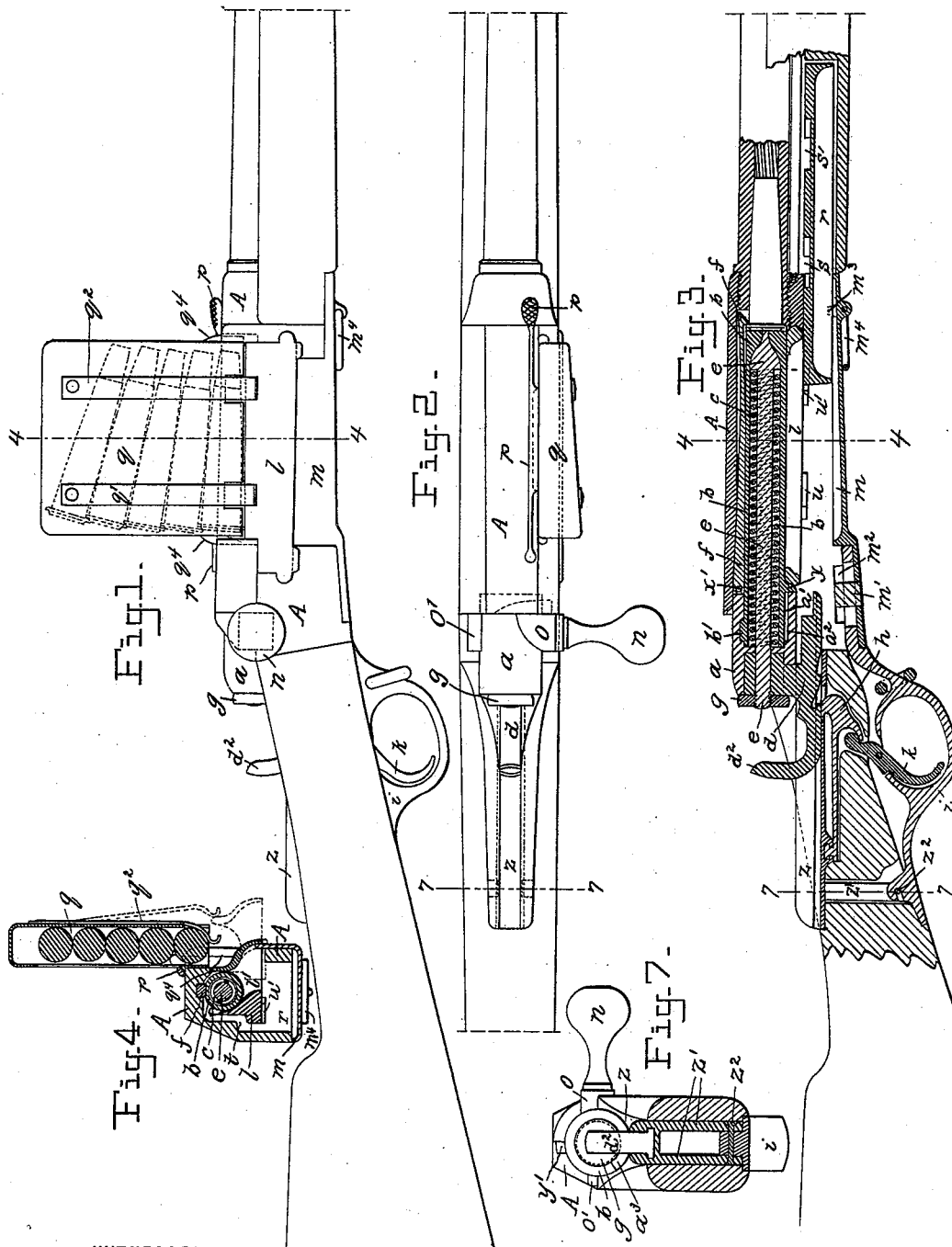
(No Model.)

2 Sheets—Sheet 1.

E. G. N. SALENIUS.  
MAGAZINE GUN.

No. 386,659.

Patented July 24, 1888.



WITNESSES:

Geo. A. Crane.  
John Revell.

INVENTOR.

E. G. N. Salenius.

BY

Howson and Sons,  
his ATTORNEYS

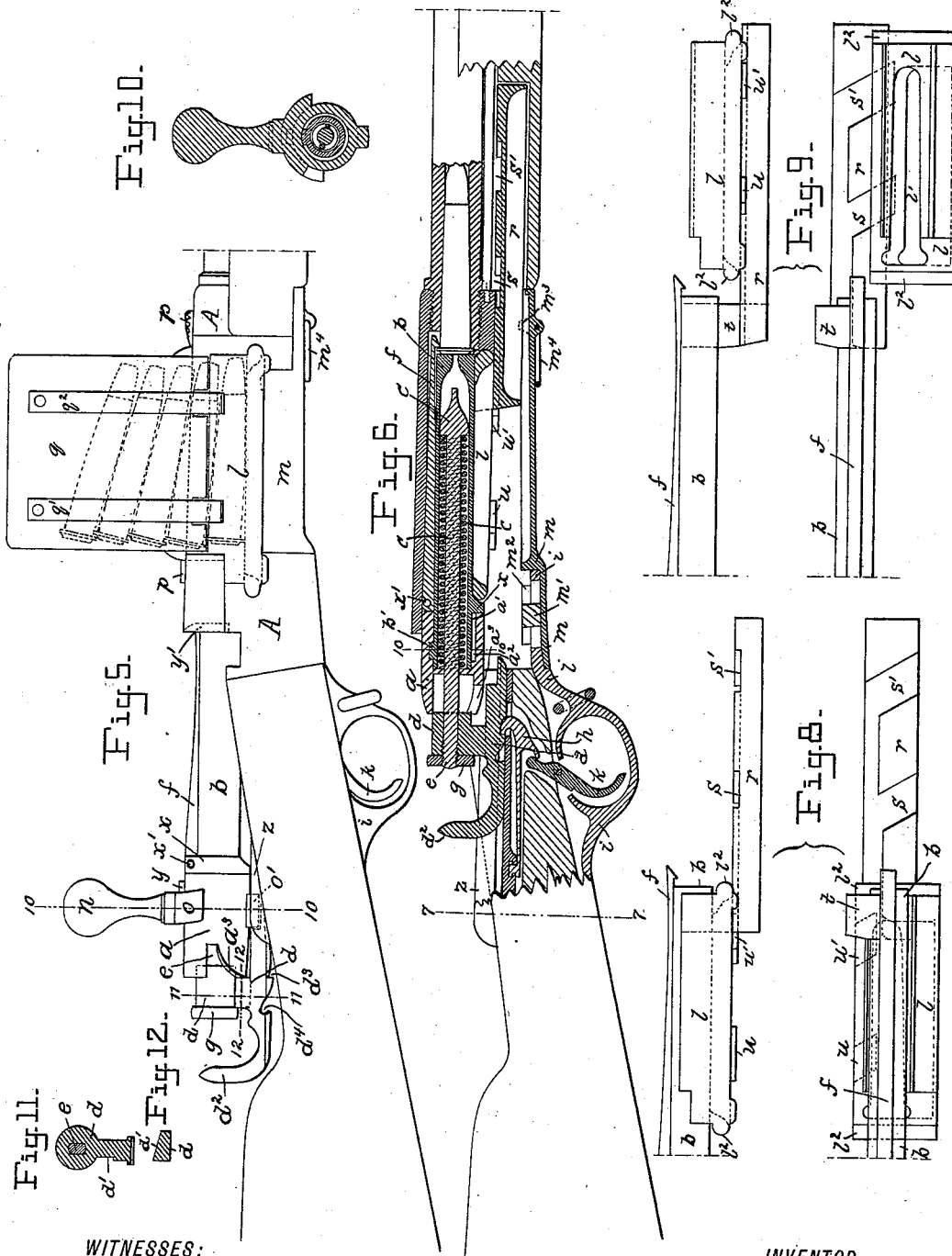
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# UNITED STATES PATENT OFFICE.

ERIK GUSTAF NICOLAUS SALENIUS, OF STOCKHOLM, SWEDEN.

## MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 386,659, dated July 24, 1888.

Application filed November 9, 1886. Serial No. 218,391. (No model.) Patented in England March 1, 1886, No. 2,933, and in Norway March 24, 1886, No. 60.

*To all whom it may concern:*

Be it known that I, ERIK GUSTAF NICOLAUS SALENIUS, a subject of the King of Sweden, and a resident of Stockholm, Sweden, have invented certain Improvements in Magazine-Guns, (for which a British patent, No. 2,933, dated March 1, 1886, and a Norwegian patent, No. 60, dated March 24, 1886, have been obtained,) of which the following is a specification.

This invention relates to a magazine-gun which may also be used without magazines.

When it is used as a magazine-gun, the loading takes place as one continuous operation by loosening the breech-piece and drawing it, with all the parts attached to it, backward parallel with the axis or middle line of the bore, and then pushing it forward again. On drawing back the breech-piece the firing spring is compressed, the empty cartridge-case is drawn out of the chamber and thrown away, and a fresh cartridge is taken out of the magazine, situated to the side of the gun and above the axis of the bore. When pushing forward, the cartridge is pushed into the firing-chamber, the mechanism is brought to full-cock and closed, and the gun is ready for firing. The few portions of the breech are made in such a manner that the whole mechanism can be taken apart and put together again without any spanner being needed.

In the annexed drawings, Figure 1 shows a side view of a portion of a magazine-gun with the magazine on top, and Fig. 2 shows a plan of the same. Fig. 3 shows a side view of the same portion of the gun, the lock, and adjacent parts in vertical section. Fig. 4 is a cross-section on the line 4 4 in Figs. 1 and 3. Fig. 5 is a side view of the loading mechanism, the bolt being pulled quite out. Fig. 6 shows the mechanism in longitudinal vertical section when the gun is cocked and ready for firing. Fig. 7 is a section on the line 7 7 in Figs. 2, 3, and 6. Fig. 8 is a side view and a top view of the front part of the bolt and its plate, with the carrier, when the bolt is quite pushed in, as in Fig. 6. Fig. 9 shows a side view and a top view of the same parts when the bolt is drawn quite back, as in Fig. 5. Fig. 10 is a cross-section on the line 10 10 in Figs. 5 and

6. Fig. 11 is a cross-section on the line 11 11 in Fig. 5. Fig. 12 is a horizontal section on the line 12 12 in Fig. 5.

The gun as far as it is shown in the figures has a firing-pin with central fire. The invention may, however, be also applied to rim-firing by placing the point of the firing-pin at the edge of the base of the bolt instead of in the middle.

The breech mechanism is entirely inclosed in a steel casing, A, and consists of the following parts: *a*, breech piece with knob *n* and swellings or projections *o o'*; *b*, breech-bolt; *c*, firing-spring; *d*, cocking-piece; *e*, firing-pin; *f*, extractor; *x'*, extractor pin; *g*, nut for firing-pin; *h*, trigger-spring; *i*, trigger-guard; *k*, trigger; *l*, carrier; *m*, lower part of the breech-casing; *p*, spring for fixing the magazine, and *q* magazine.

The bolt *b* is firmly united by means of a downward-projecting part, *t*, to a plate, *r*, situated under the carrier *l*. This plate has on its upper surface two angular and oblique notches, *s s'*. The carrier, being of a rectangular form, has an elongated and somewhat oblique opening right through it of a size such that a cartridge-case and even a cartridge that has missed fire can fall through it. On the upper side are two projecting ridges alongside of the opening. (See Figs. 4 and 9.) On the under side it has two oblique steps, *u u'*, which fit into the notches *s s'* of the plate of the bolt, and also at its ends two swellings or projections, *t' t'*, which fit into grooves in the casing A and guide the carrier during its movement in and out of the casing.

The outer side of the carrier is shaped according to the exterior of the casing, and completely covers the opening in the side of the casing when the carrier is pushed in. The bolt *b* is connected with the breech-piece *a* by means of a projection, *b'*, on the former being passed through an opening, *a'*, into a groove, *a'*, in the latter and turned a quarter of a revolution. (See Fig. 10.) The extractor *f* is let into a flange, *x*, of the bolt and secured by means of a pin, *x'*. The firing-pin *e*, which passes through a partition in the breech-piece *a*, on which is supported the firing-spring *c*, is pushed with its flattened extremity into a cor-

responding hole in the cocking-piece *d*, and secured there by means of a nut, *g*, or in another manner.

The cocking piece *d* is provided with a thumb piece, *d'*, and moves with its lower portion, which is furnished with projecting flanges, in a corresponding groove in the tail-piece *z*, projecting from the casing *A*. It has on its under side two notches for full-cock and half-cock, *d*<sup>3</sup> *d*<sup>4</sup>.

The peculiarly-shaped trigger-spring *h* is acted upon directly by the trigger. (See Figs. 3 and 6.) It is connected with the tail-piece *z* by means of a dovetail.

When loading the gun, the knob *n* is turned one-fourth of a revolution upward and to the left, so as to turn the swellings or projections *o* and *o'* out of their slots and notches in the sides of the casing, whereby the breech-piece is freed, together with the bolt attached to it. During this movement the projection *y* on the breech-piece moves along the oblique groove *y'* in the casing *A*, (see Figs. 2 and 5,) and causes the breech-piece, with the bolt *b* and the extractor *f*, to move slightly backward, whereby the empty cartridge case (or cartridge that has missed fire) is made loose. Simultaneously with this the oblique edge *a*<sup>3</sup> in the breech-piece, Fig. 5, presses against the beveled vertical part *d'* of the cocking piece *d*, Figs. 11 and 12, and forces it, together with the firing-pin *e*, attached to it, to move back so far that it comes up on the back edge of the breech-piece. The firing spring is compressed thereby, and the front point of the firing-pin is pulled back and lies protected in the bolt. If, now, the bolt *b* be moved back by means of the knob *n*, the loose cartridge-case comes with it. When the front end of the bolt has reached the rear edge of the opening *v'* in the carrier *l*, which is underneath, Figs. 3, 4, and 9, the empty cartridge case (or cartridge which has missed fire) drops down into the opening of the carrier and is caught by the upper side of the plate *r*. On the bolt continuing its retrograde movement the oblique parts of the notches *s s'* in the plate *r* push the projections *u u'*, and with them the carrier *l*, aside and under the magazine *q*, (the dotted position in Fig. 4,) which is situated on the right side of the gun, whereby at the same time the springs *q' q'*, which retain the cartridges in the magazine, are pushed back. When the carrier has reached this position, the empty cartridge-case falls out through its own weight and a fresh cartridge falls from the magazine into the top part of the carrier and remains there, because the opening in the latter does not lie exactly under the falling cartridge. (See Fig. 5.) On pushing the bolt forward the carrier, provided with the fresh cartridge, is brought back (by the oblique notches in the plate *r*) to its original position in the axis or middle line of the gun, whereupon the cartridge is pushed into the firing-chamber by the bolt *b*, which passes over the carrier. At the same time the cocking-piece *d* stops in front of the trigger-spring

*h*, which catches in full-cock, Fig. 6. On turning down the knob *n* the swellings *o o'* enter into the grooves cut in the casing and the lower part of the knob moves into its slot in the right side of the casing, at the same time compressing the firing-spring still more. The gun is now loaded and the firing-spring cocked for firing. During this movement of the bolt when loading, which takes place as one continuous operation, the bolt is guided, partly by the plate *r* and the part *t*, against the sides of the casing *A*, and partly by the swelling *o'* of the breech-piece *a* and the lower part of the cocking-piece *d*, both of which move in the groove in the tail-piece *z* of the casing. The thumb-piece *d'* serves to bring the gun to half-cock and thence to full-cock. When the magazine is not employed, the advancing carrier is furnished by hand with fresh cartridges.

The under part of the casing and the trigger guard *i* are connected to the rest of the casing, and the whole is fastened to the stock in the following manner: Projecting downward from the rear end of the tail-shaped extension *z* of the casing are two pins, *z'*, which are connected together at their lower extremities by a bolt or rivet, *z''*. These pins are inserted in a corresponding hole in the stock, Fig. 3, and the fork-shaped rear end of the trigger-guard is passed upon this bolt *z''*. Then the pin *m'*, furnished with a double hook on the lower part, *m*, of the casing, is inserted through an elongated aperture in the front end of the trigger-guard and the lower part of the casing is turned round, whereby the hooks of the pin *m'* enter into the grooves *m*<sup>2</sup> in the sides of the casing. When the lower part of the casing is turned round ninety degrees, it falls into line with the gun. The double hook is then in the right position, and the pins *m*<sup>3</sup>, situated on each side of the front elastic part of the lower casing, enter into corresponding holes on the under side of the casing, and are thus held firmly. In order to be able to operate the lower part of the casing *m* conveniently, its front end is provided with a ring, *m*<sup>4</sup>. The barrel is screwed into the front wall of the casing. The magazine *q*, which is made of sheet metal, is provided with two downwardly-projecting pins, *q' q'*, which are inserted into corresponding holes in the casing *A*. A projecting edge of the magazine (see Fig. 4) pushes away a spring, *p*, on the upper side of the casing, which spring then returns and slides over the said edge, thus holding the latter and the magazine firmly against the upper side of the casing. When the magazine is to be removed, the spring *p* is moved aside, leaving the magazine free to be taken away. The mode of fixing the magazine to the gun or fire-arm may, however, be varied. The magazine has only one opening for placing in cartridges, and through the same opening they fall also out at loading when it is placed on the gun with the opening downward. The cartridges are retained by the springs *q' q'*, the lower ends of

which project over the opening. On moving out the carrier to receive a fresh cartridge the outer side of the former catches hold of the springs  $q'$   $q''$  and pushes them outward, so that the cartridges in the magazine are set free and fall downward and the undermost upon the carrier. When the carrier is moved in again on advancing the bolt, the cartridge goes with it and the rest are held by the aforementioned springs  $q'$   $q''$ .

In order to put a cartridge into the magazine, the cartridge is placed on the opening and forced into it, thus pushing aside the ends of the springs. The magazine may be fixed in the same way, even when fixed upon the gun.

As already mentioned, no spanner is needed for taking the different portions of the breech apart and putting them together again.

The mode of operation is as follows: The nut  $g$  of the firing-pin is first unscrewed, the bolt  $b$  is drawn back, as when loading the gun, and the cocking-piece  $d$  is removed. The lower part,  $m$ , of the casing is then removed by taking first the pins  $m^3$  in the front part of the same out of their holes and then turning the part  $m$  to the right, so that the double hook  $m'$  in the rear end may be taken out through its hole in the trigger-guard  $i$ . The carrier  $l$  is next removed, and then the trigger-guard  $i$  and the stock. The breech-piece  $a$  is now raised sufficiently to free the swelling or projection  $o'$  from the groove in  $z$ , and is then turned downward to the left, so that the opening  $a'$  in the breech-piece comes opposite to the step  $b'$  on the bolt, thus freeing the breech-piece, which may be drawn off the bolt. The firing-pin  $e$  and the firing spring  $c$  are then taken out of the bolt and taken apart. The bolt  $b$ , with its plate  $r$ , and the extractor  $f$  are removed from underneath. The several parts are put together in the opposite order in which they were taken apart.

I claim as my invention—

1. A breech-loading gun having a barrel, breech-piece, and bolt, in combination with a cartridge-carrier in guides at right angles to the length of the gun and acted on by the bolt to be moved laterally outward from the casing as the bolt is withdrawn longitudinally and to be returned within the casing as the bolt is moved forward, all substantially as described.

2. A breech-loading gun having a barrel, breech-piece, and bolt, in combination with a carrier in horizontal guides at right angles to the length of the gun and having an oblique opening through it for the admission of the cartridge above and the discharge of the shell

below, the said carrier being acted on by the bolt to be moved laterally in or out as the bolt is moved longitudinally in or out, all substantially as described.

3. A breech-loading gun having a barrel, breech-piece, and bolt, in combination with a carrier in horizontal guides at right angles to the length of the gun and having an oblique opening through it for the admission of the cartridge above and the discharge of the shell below; corresponding oblique steps, and grooves on the said bolt and carrier, whereby the latter is moved laterally into or out of the casing as the bolt is moved longitudinally in or out, all substantially as described.

4. A breech-loading gun having a magazine, barrel, and breech-piece, in combination with a carrier movable laterally in the gun and having an opening through it for the cartridges from the magazine, and corresponding oblique steps, and grooves on the carrier and bolt, whereby the carrier is moved laterally in or out as the bolt is moved, substantially as set forth.

5. A breech-loading gun having a longitudinally-moving bolt and a cartridge-carrier provided with an opening through it for the admission of the cartridge above and the discharge of the shell below, the said carrier being moved into or out of the breech-casing by the bolt, substantially as described.

6. A breech-loading gun having a longitudinally-moving bolt and cartridge carrier provided with an oblique opening entirely through it for the admission of the cartridge above and the discharge of the shell below, and with projecting edges at the upper sides of the opening for holding the cartridges, substantially as set forth.

7. A breech-loading gun having a magazine, breech-piece, barrel, and longitudinally-moving bolt, the latter having oblique grooves, in combination with a laterally-movable cartridge-carrier having oblique steps to engage with said oblique grooves, and having an oblique opening for the cartridges, and projecting edges adjacent to said opening on the upper side, all substantially as and for the purpose set forth.

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

ERIK GUSTAF NICOLAUS SALENIOUS.

Witnesses:

AUG. MALMBERG,

OTTO NILSON,

Both of Stockholm.