

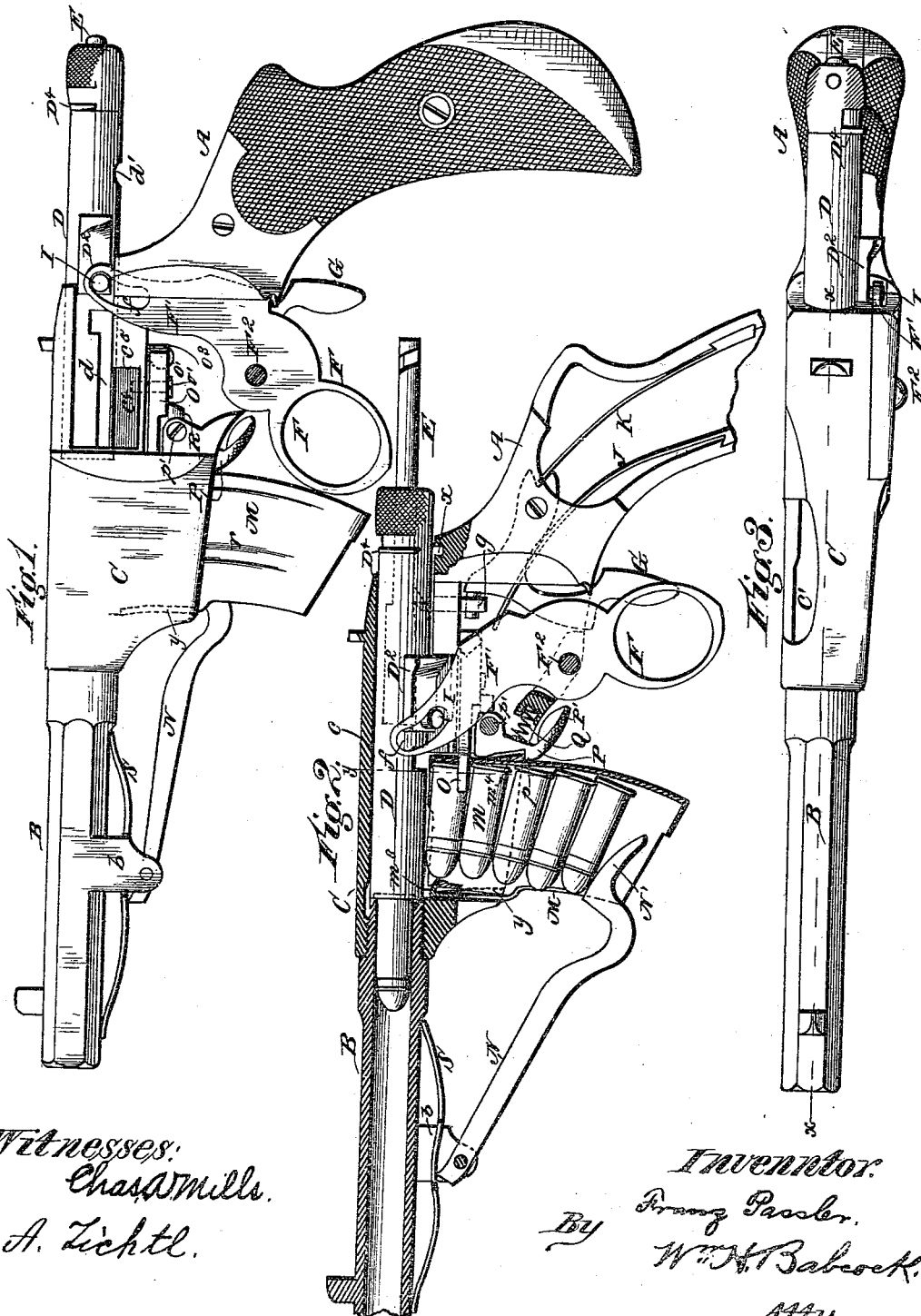
(No Model.)

2 Sheets—Sheet 1.

F. PASSLER.
MAGAZINE FIRE ARM.

No. 385,875.

Patented July 10, 1888.



Witnesses:
Charles Mills.
A. Lichtl.

Inventor:
Fritz Passler.
By W. H. Babcock.
Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

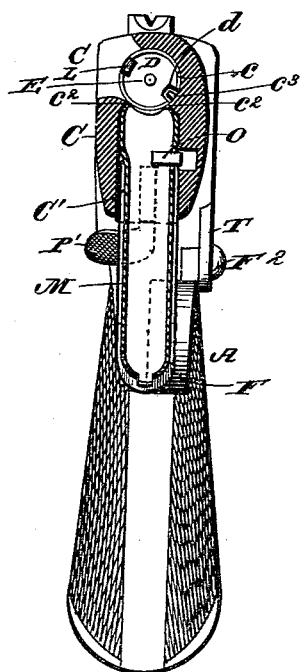


Fig. 5.

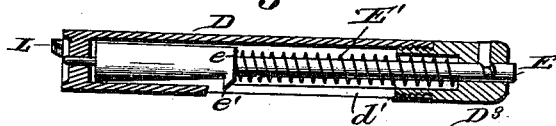


Fig. 6.

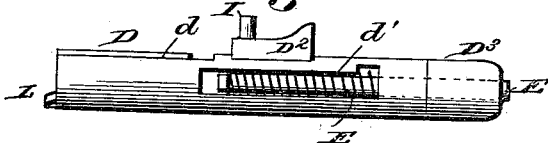


Fig. 7.

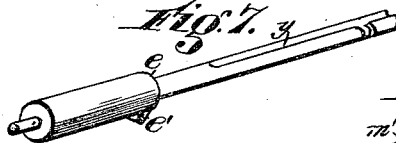


Fig. 8.

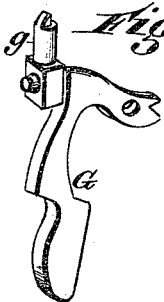


Fig. 9.

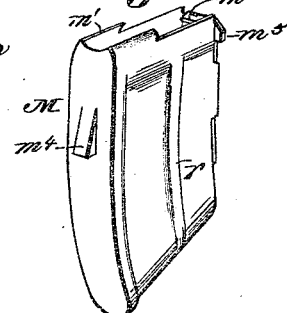


Fig. 10.

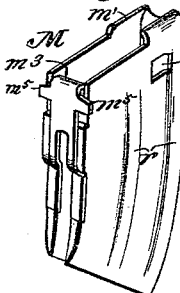


Fig. 11.

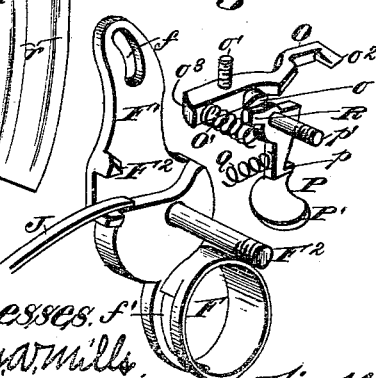


Fig. 12.

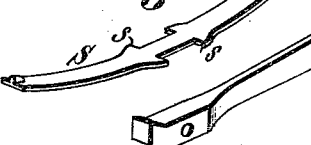
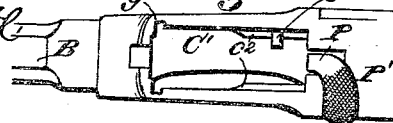


Fig. 13.



Witnesses: *f*
Chas. A. Mills.
A. Zichtl.

Fig. 14.



Inventor:

By *Frank Passler.*
Wm. H. Babcock.

Atty.

UNITED STATES PATENT OFFICE.

FRANZ PASSLER, OF OTTAKRING, NEAR VIENNA, AUSTRIA-HUNGARY.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 385,375, dated July 10, 1888.

Application filed October 20, 1887. Serial No. 252,939. (No model.)

To all whom it may concern:

Be it known that I, FRANZ PASSLER, of Ottakring, near Vienna, Empire of Austria-Hungary, a subject of the Emperor of Austria-Hungary, residing at Ottakring, near Vienna, have invented a new and useful Improvement in Magazine Fire-Arms, (for which I have obtained patent in no country whatever hitherto,) of which the following is a specification.

This invention relates to magazine fire-arms which use detachable magazines and reciprocating breech-bolts and firing-pins.

The object of said invention is to provide improved means for holding and releasing the magazine, feeding the cartridges to the space or passage before the breech-bolt, expelling the shells, and withdrawing all obstructions to the entrance of a new magazine. These objects I effect by the use of the construction and combination of devices hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 represents a side elevation of a pistol embodying my invention. Fig. 2 represents a vertical longitudinal section of the same, the ends of the barrel and stock being broken away and some of the parts being shown in elevation. Fig. 3 represents a plan view of the pistol. Fig. 4 represents a vertical transverse section looking rearward on the line *x x* of Fig. 1. Fig. 5 represents a vertical longitudinal section of the breech bolt, showing the firing-pin and its spring in elevation. Fig. 6 represents a side elevation of said breech-bolt inverted to show the L-shaped slot in which works the lug on the firing-pin. Fig. 7 represents a detail perspective view of the firing-pin. Fig. 8 represents a similar view of the trigger. Fig. 9 represents a similar view of the cartridge-bar, the trigger, and the magazine-holder, illustrating the alternative methods of withdrawing said cartridge-bar. Fig. 10 represents a detail view of the spring for the cartridge-lifter; Fig. 11, the cartridge-lifter; Figs. 12 and 13, the magazine, and Fig. 14 a part of the casing with guide-grooves.

A designates the stock of a magazine-pistol embodying my invention; B, the barrel; C, the intervening casing; D, the breech-bolt; E, the firing-pin; F, the trigger for operating the breech-bolt, and G the sear-trigger for holding and releasing the said firing-pin.

The upper part of casing C is provided with a tubular passage, *c*, of greater diameter than the bore of the barrel and extending in a right line therefrom to and through the rear end of said casing. In the side wall of this passage, near the forward end, is an opening, *c'*, for the escape or removal of cartridge-shells after discharge. There is a corresponding opening at the bottom of the same part of the passage communicating with a magazine-chamber, *C'*, in the lower part of said casing. Internal flanges, *c''*—one on each side of said magazine-chamber, at the top thereof—allow cartridges to be forced up between them into said passage, but do not allow the magazine itself, hereinafter described, to ascend beyond them. An internal guide-lug, *c'''*, near the rear ends of said openings, fits an L-shaped groove, *d*, in the breech-bolt, said groove extending backward longitudinally from the forward end of said breech bolt a distance corresponding to the forward motion of said bolt, hereinafter described, and terminating in a short lateral extension, which allows the said breech-bolt to be turned a little on its axis when this forward motion is ended. The material of said breech-bolt on the forward face of this lateral extension will lock with said guide-lug after this turning and prevent the withdrawal of said breech-bolt; but to more effectually insure this locking I have provided the said breech-bolt near its middle with a shoulder, *D'*, having a considerable rearward face, and have provided the passage *c* with a lateral and downward extension, *c'*, having a corresponding shoulder, *c''*, at the rear end of it. The axial turning of the breech-bolt at the end of the forward movement, as stated, will cause the former shoulder to be in position for locking against the latter shoulder and preventing recoil of the breech-bolt.

The firing-pin E is arranged within the breech-bolt D, and protrudes, both normally and in the act of discharge, through the forward end of said breech-bolt sufficiently far to explode a cartridge. It also slides freely through the rear end of said breech-bolt, which consists of a nut, *D'*, screwed on the body thereof. A spiral spring, *E'*, surrounds this firing-pin E, and bears at its forward end against an enlargement, *e*, thereof. The rear end of said spring bears against nut *D'*, so that

the tension of said spring may be increased or diminished thereby. Either the firing-pin or the breech-bolt may be moved longitudinally with regard to the other, and when in use both are thus moved alternately. To allow the firing-pin to be held stationary for preserving the tension of this spring during the forward motion of the breech-bolt and afterward until the spring thus put under tension is set free to act, I provide said firing-pin with a lug, *e'*, which extends into an L-shaped slot, *d'*, of said breech-bolt, and give this lug a forward face at right angles to the axis, this face being normally in contact with a vertical pin, *g*, which has a loose connection with the pivoted sear-trigger *G*, and moves up and down with the vibration of the latter through an opening into the passage *c* near the rear end thereof. The slot *d'* corresponds in arrangement to the slot *d* aforesaid, and allows the longitudinal and axial motion of the breech-bolt, the lug *e'* acting, as does the lug *c'* aforesaid, with relation to the wall of the slot.

For the operation of the pistol, it is necessary that the firing-pin should at first remain motionless while the breech-bolt advances, compressing the pin, then that the breech-bolt should be locked against recoil, then that the firing-pin should be released, in order that the spring *E'* may throw it forward and explode the cartridge, the forward and axial motion of the breech-bolt and the forward motion of the firing-pin requisite to effect these results being reversed while the parts are restored to their normal position, preparatory to another shot. To effect these motions, the trigger *F* is provided with an oblique upward and forward extension, *F'*, having near its upper end a slightly curved slot, *f*, which receives a pin, *I*, projecting radially from the breech-bolt. The shape of the slot *f* is so arranged with relation to the vibration of the trigger *F* on its pivot *F'* and the position of the pin *I* that the pressure of the operator's finger on said trigger causes the breech-bolt to move forward and then turn into its locking position, the reverse procedure being effected by a forward motion of said finger and the lower part of the trigger. A spring, *J*, bears against the said trigger *F* and resists its motion in either direction, holding it in the positions thus taken. The lower end of this trigger is annular to receive the finger, and provided with a rear slot, *f'*, to receive the rear end of the sear-trigger aforesaid, in order that a continuance of pressure by the finger after the spring *E* has been put under tension and the breech-bolt *D* has been locked against recoil may operate said sear-trigger to free the firing-pin and allow discharge. The sear-trigger is provided with a replacing-spring, *K*, both of the springs *J* *K* being in the stock *A*, except their operative ends.

The nut *D'* is provided with a flange, *D'*, transverse to the axis of the breech-bolt, which fits into a slot, *x*, in the top of casing *C* at the

rear end of the latter. The said nut is also recessed to receive the rear wall of the casing behind said slot, and the rear part of said nut, behind said slot, overhangs the rear face of said wall. This construction of the nut and the casing allows the said nut to be made of larger diameter than the body of the breech-block, which is convenient, without interfering with the axial motion of the latter. The forward end of the breech-bolt is provided with a spring-catch, *L*, which acts as a cartridge-extractor when the breech-block moves backward.

M designates the magazine, which is a casing of sheet metal fitting removably into the magazine-chamber *C'* and extending down below the casing *C*. It is of sufficient width and depth to conveniently hold a pile of cartridges, *m*, lying singly one on another, the lowest of the pile being inclined, in order that the pressure of the pivoted cartridge-lifter or feeding-bar *N* may be applied thereto at right angles. The uppermost cartridge is horizontal, and the intervening cartridges occupy all the intermediate positions. Of course the lowest cartridge is moved successively into each of these as it is lifted toward the position for discharge. To allow and guide this motion, the front and rear of the magazine are curved downward and forward, the curvature of the rear wall being the greater, especially toward the bottom. The bottom of the magazine is also inclined, and both the front and bottom are slotted to allow the feeding motion of the cartridge-lifter and the withdrawal thereof without impediment. The top of the magazine is provided on the side edges with elastic inwardly-inclined flanges *m'*, opposite the cartridge base, which prevent the accidental dislodgment of the cartridges in handling or transporting a magazine filled with them, but will yield so as to allow the cartridge-base to be forced up through them when the end of the cartridge-bar *O* is forced transversely in under the upper cartridge through an opening, *m''*, in one of the side walls of the magazine. The bullet end of the cartridge is similarly held in position by a spring-catch, *m''*, attached to the front of the magazine near the top thereof. This catch has an inwardly and downwardly inclined lip extending over the top of the front of the magazine. Each cartridge is inserted obliquely from the front of the top of the magazine, which is unflanged except toward the rear. The base of the cartridge passes under the flanges *m'*, and the bullet presses obliquely on the lip of spring-catch *m''*, so as to force this catch back until the bullet is below it. The catch then springs back into its former position, and the cartridges are held within the magazine, as stated. The back of the magazine is provided nearer its upper than its lower end with a shoulder, *m''*, presented downward and having an upward incline. This incline forces back a spring-pressed magazine-holder, *P*, which is pro-

vided with a beveled tooth, *p*. The said tooth snaps under the shoulder *m*⁴ and holds the magazine in place. This magazine holder is merely a small bar pivoted at its upper end within casing *C*, having a milled thumb-piece, *P*¹, below said casing. A spring, *Q*, forces it into engagement with the shoulder *m*⁴. A pin, *R*, on its rear face bears against a beveled lug, *o*, on the cartridge-bar *O* forward of the pivot *o*¹ of the latter. As the pivot *p*¹ of the magazine-holder is horizontal and the pivot *o*¹ of the cartridge-bar is vertical, the rearward motion of the thumb-piece *P*¹ not only withdraws the tooth *p* from below the shoulder *m*⁴, but also turns the cartridge-bar *O* on its pivot, so as to withdraw its bent holding end *o*² from the opening *m*² in the side of the magazine. Thus a single motion of said thumb-piece removes every obstacle to the insertion of the magazine *M* into the magazine-chamber *C* or its withdrawal therefrom.

It is necessary to withdraw the end *o*² of cartridge-bar *O* in like manner before the next lower cartridge can pass above it. To this end I provide the upward extension, *F*¹, of trigger *F* with a lateral lug, *F*², which wipes against an incline, *o*³, on the outer rear corner of the cartridge-bar, giving the requisite pivotal motion to the latter. This operation takes place during the latter part of the rearward pressure of the lower end of said trigger. After the cartridge-bar is released, in either case, a spring, *O*¹, restores it to its normal position, with the bent end *o*² within the magazine, and lifting the rear end of the upper cartridge, *m*. To allow this latter action, the upper face of said end *o*² is inclined. The lower face of it is inclined also, to facilitate the entrance of said end between the upper cartridge and the one next below it.

As the cartridges cannot be fed upward out of the magazine while the spring-catch *m*³ is in its normal position, the sides of this catch are provided with ears *m*⁵, which enter guide-grooves *y*, formed in the side walls of the magazine-chamber *C*, near the front end of the latter. These grooves are inclined forward and upward for the upper half of their length, and consequently the lip of the spring catch is withdrawn from over the bullet ends of the cartridges as the magazine is passed upward. When the magazine is drawn down or otherwise dislodged from the magazine-chamber, the spring-catch returns to its normal or holding position.

The cartridge-lifter *N* is an arm or lever pivoted at its forward end between lugs *b*, extending downward from barrel *B*, this end being rounded, like the corresponding part of a knife-blade, to receive the pressure of the middle part of a spring, *S*, which is secured at both ends to the under side of said barrel, and holds the said cartridge-lifter securely either in its forward or its rearward position. The former is the position to which it is turned for allowing the insertion or removal of the magazine, the lat-

ter is its normal position; and when it is therein the spring *S* forces a curved extension, *N*¹, of said cartridge-lifter up against the lowest cartridge *m* of the pile, steadily feeding them upward until all are discharged. The spring *S* is recessed in the middle to fit between the lugs *b*, and provided with shoulders *s* on each side thereof, so that said lugs guide and brace the said spring. The upward pressure of this cartridge-lifter is resisted by the cartridge-bar *O* until the holding end of the latter is withdrawn. By their combined action the cartridges are supplied regularly one at a time to the space above the magazine-chamber. A removable plate, *T*, fits into grooves in the casing *C*, so as to protect the internal operative mechanism, but allow convenient access thereto at will. The firing-pin *E* is provided with a longitudinal slot, *y*, to receive a guide pin or screw which may be passed down through an opening in the top of breech-bolt *D*. This slot has a lateral extension near its outer end to allow the axial motion of said breech-bolt independent of said firing-pin, for the purpose of locking the firing-pin out of action. This slot and guide-pin are not necessary to the operation of the pistol.

In using this pistol the trigger *F* is first pressed back to allow the insertion of the magazine *M*, thus removing both the trigger itself and the cartridge-bar *O* from obstructing positions. The magazine is then passed into place, the magazine-holder yielding to allow such insertion, and securing it afterward, as described. The cartridge-lifter is then turned into its rearward position against the cartridges *m*. The trigger *F* is then moved forward, returning the breech-bolt and firing-pin to their rear positions and opening the passage *c* above the uppermost cartridge. The cartridge-bar *O* then lifts the base of the upper cartridge through the flanges *m*¹, and the cartridge-lifter *N* raises the forward end of the cartridge still farther, so that it points obliquely upward and forward toward the bore of the barrel. The trigger *F* is then pressed, moving the breech-block forward. The front end of the breech-bolt strikes the base of the cartridge, sliding said cartridge upward into a horizontal position and pushing it into the barrel. The trigger then turns the breech-bolt into locking position, as already described, the spring *E* being under strain. A still further pressure of the trigger *F* allows the finger to press the sear-trigger and free the firing-pin, when the spring *E*¹ throws the latter violently forward and explodes the cartridge in the barrel. The next forward motion of the finger and trigger causes the breech-bolt and firing-pin to move back together, and the extractor on the end of the breech-bolt, which has caught over the rim of the cartridge-base, withdraws the empty shell into the passage *c*. Simultaneously the upward pressure of the cartridge-lifter forces the next cartridge against the said shell and causes it to fly out through the side opening in the

casing C, already described. This operation may continue until the magazine is exhausted.

If it is preferred to insert or withdraw the cartridge while the finger end of the trigger is in its forward position, this may be made practicable by pressing back the thumb-piece of the magazine-holder, whereby the holding end of the cartridge-bar will be removed from the magazine-chamber, as already described. In its forward position the finger end of the trigger is not in the path of the magazine; but its rearward position makes the insertion rather more convenient.

A number of the magazines fully loaded with cartridges may be carried about the person of the user and a new one substituted for each that is exhausted. In order that they may be light, yet have the requisite strength, the sides are provided with ribs *r*, as shown; but these are not essential. Although I have described and shown a pistol, the same construction and combination of devices may obviously be used with a rifle, fowling-piece, or other form of fire-arms.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In magazine fire arms, a magazine for cartridges, a breech-bolt and a firing-pin reciprocating in the space above said magazine, a cartridge-bar arranged opposite an opening in the side of the magazine just below the upper cartridge, a spring arranged to move the end of said cartridge-bar through said opening to lift said cartridge, and a trigger connected with said breech-bolt and arranged to strike against said cartridge-bar for withdrawing the latter, substantially as set forth.

2. A breech-bolt having a pin and a shoulder on its side, a firing-pin within said breech-bolt, and a spring bearing at one end against the firing-pin and at the other against the breech-bolt, a trigger which has a curved slot in its upper extension engaging the pin on said breech-bolt, a sear-trigger having an attachment arranged to engage a lug or shoulder on the firing-pin, and the casing provided with a shoulder for engaging the shoulder on the breech-block, all substantially as set forth.

3. In magazine fire-arms, the combination of a casing having a magazine-chamber and an opening on one side above said chamber with a magazine fitting in said chamber, a cartridge-lifter, a cartridge-bar having reciprocation into the magazine beneath the upper cartridge, springs actuating said lifter and bar, a breech-bolt, and a trigger connected thereto and provided with a lug arranged to strike said cartridge-bar, substantially as set forth.

4. A longitudinally-slotted breech-bolt, a firing-pin within it, a spring in contact with said breech-bolt at one end and with said firing-pin at the other, a trigger having a pin-and-slot connection with said breech-bolt for reciprocating and turning it, a pin in contact with a shoulder on said firing-pin, and a sear-trigger connected with said pin thus in contact, the sear-trigger being immediately behind the main trigger in order that the pressure on the latter may operate both triggers, substantially as set forth.

5. A cartridge-magazine having a shoulder presented downward, in combination with a magazine holder or catch having reciprocation below said shoulder, a spring arranged to move said magazine-holder into engagement with said shoulder, a handle for withdrawing it from such engagement, a cartridge bar having reciprocation through an opening in the side of said magazine just below the upper cartridge, a spring arranged to force said cartridge-bar under said cartridge to lift the same, a breech-bolt and firing-pin reciprocating in the space above said magazine, and the casing having a chamber which receives said magazine, the cartridge-bar being provided with a lug or shoulder arranged to be struck by said magazine-holder for withdrawing said cartridge-bar, as set forth.

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

FRANZ PASSLER.

Witnesses:

MORIS GELBHAUS,
THEODOR GELBHAUS.