

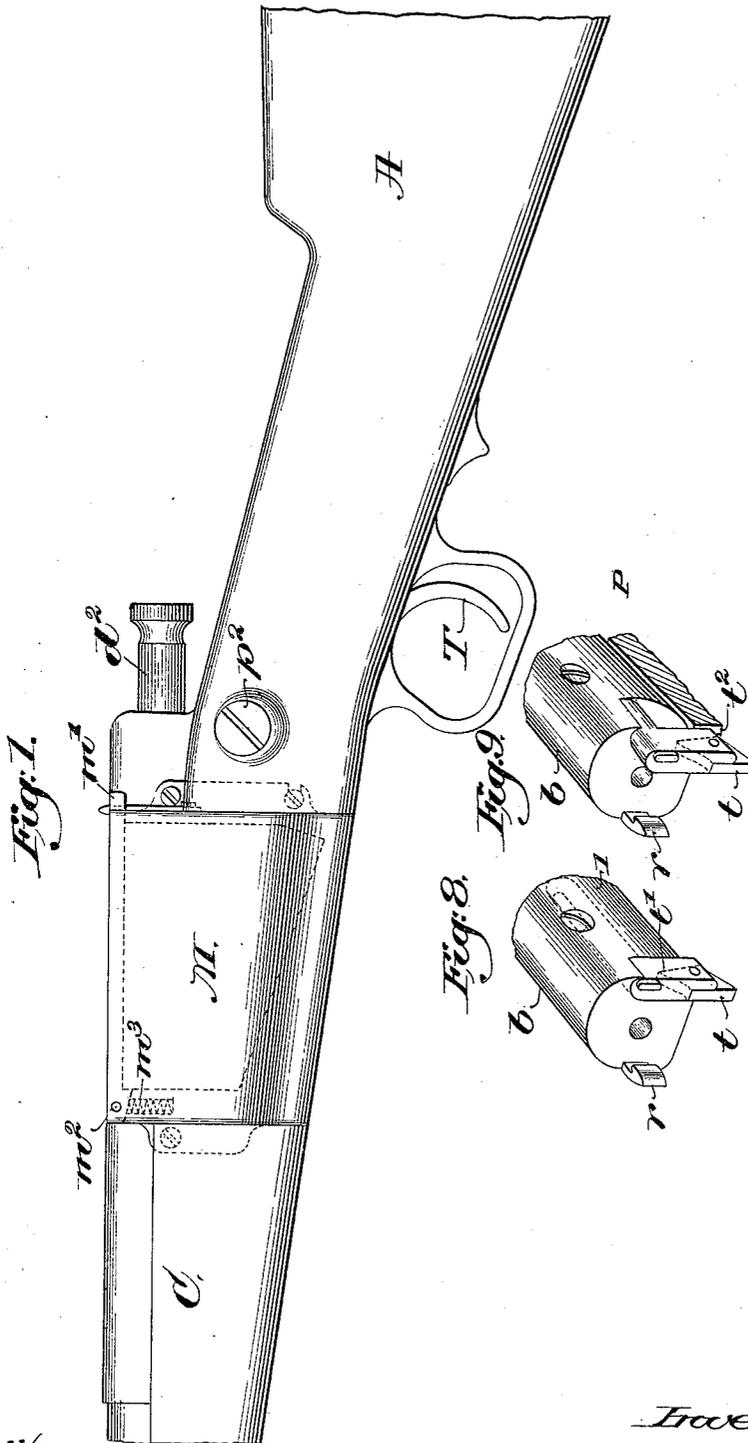
(No Model.)

3 Sheets—Sheet 1.

G. F. FOGERTY.
MAGAZINE GUN.

No. 533,949.

Patented Feb. 12, 1895.



Witnesses.
W. C. Harrow
Edward F. Allen.

Inventor:
George F. Fogerty.
By Crosby & Gregory, attys.

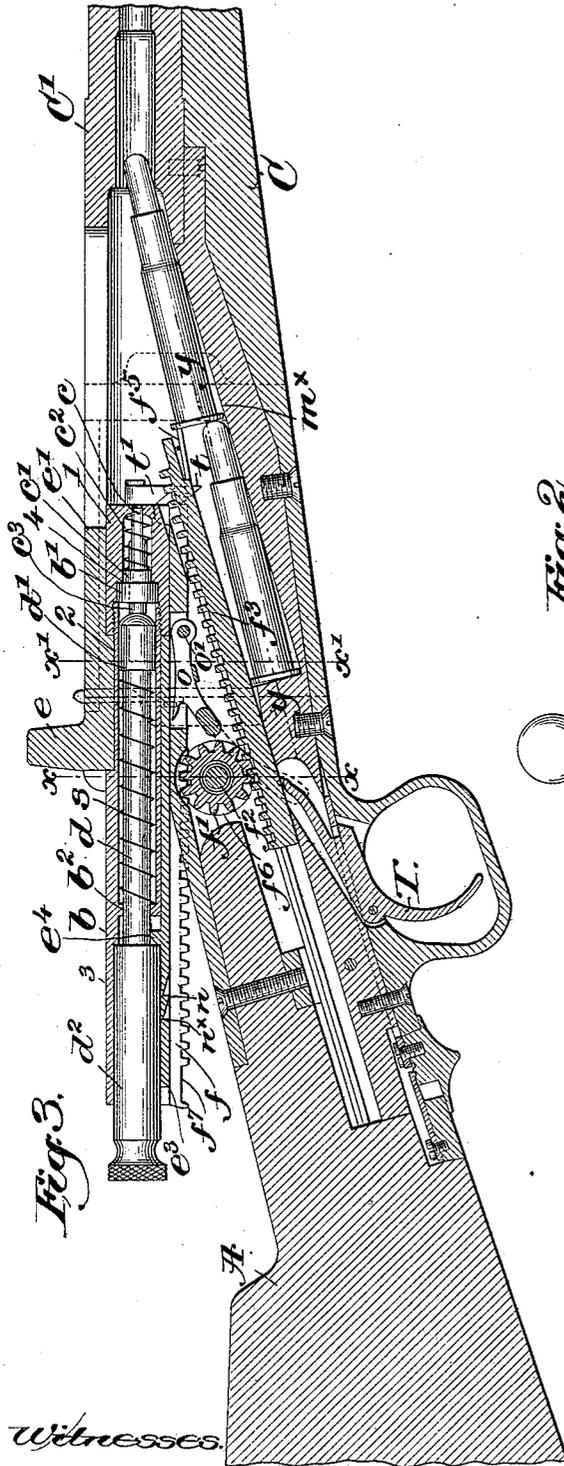
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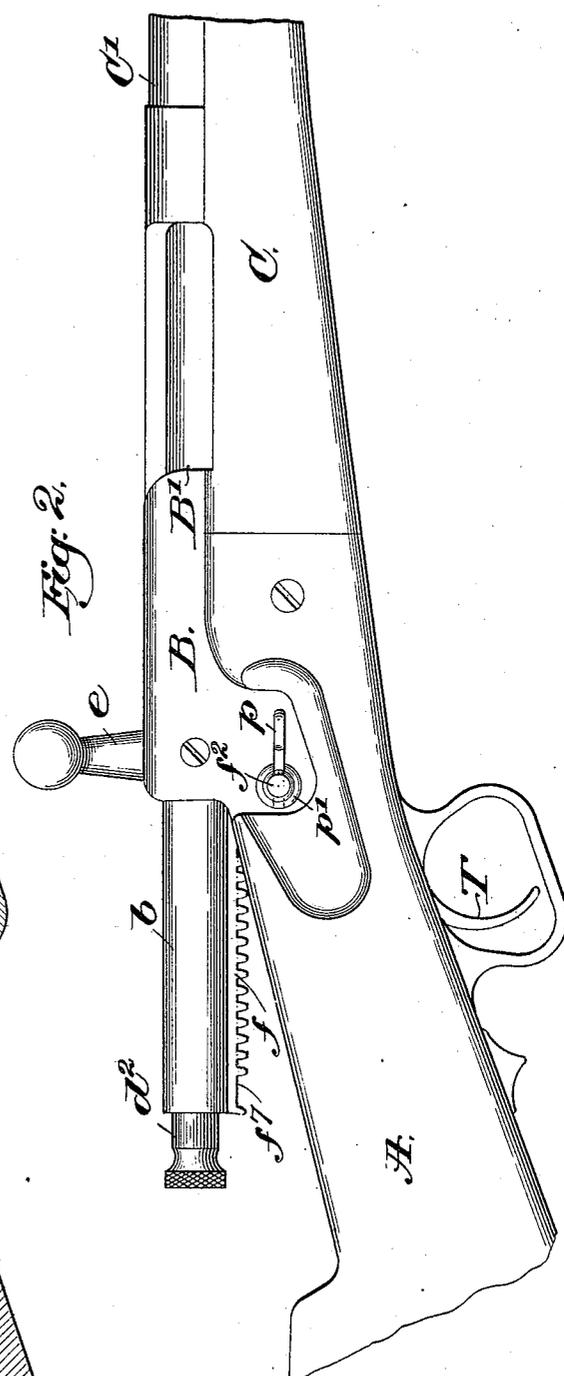
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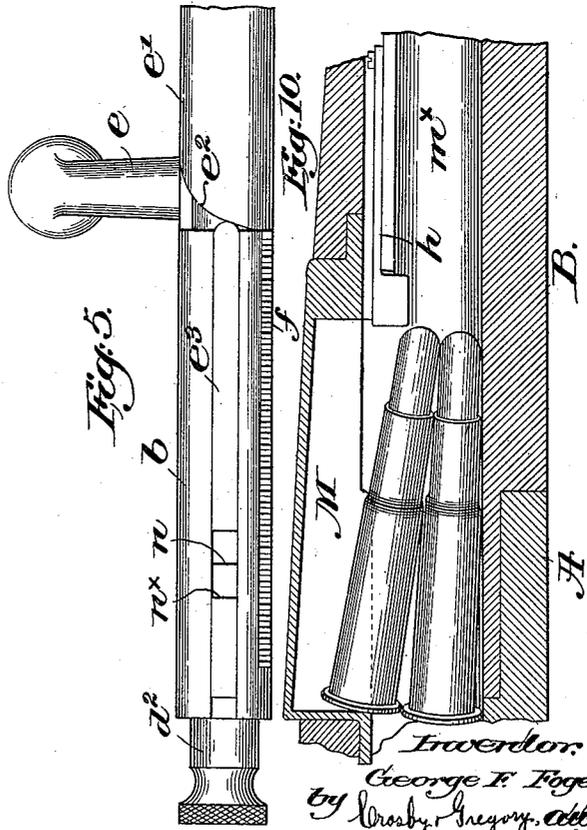
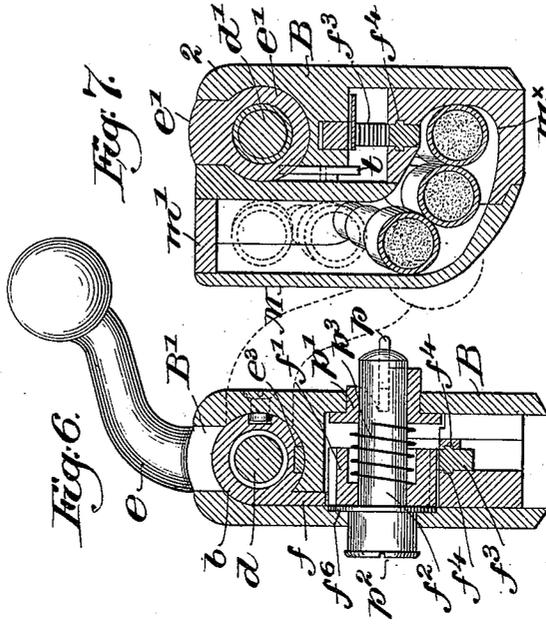
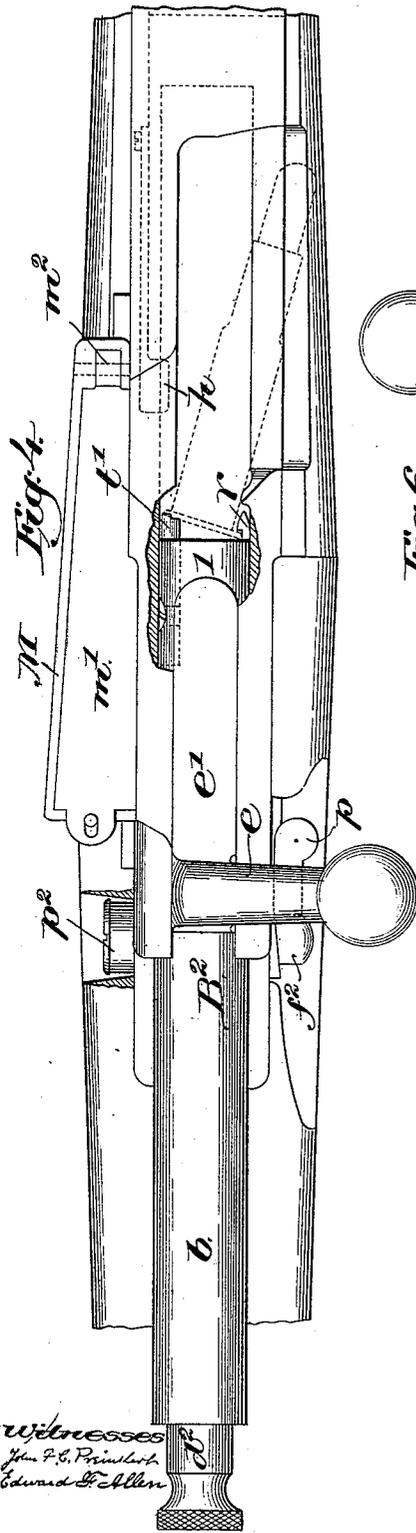
Witnesses.
W.C. Harmon
Edward G. Allen.



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Witnesses
John F. C. Printz
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Inventor:
George F. Fogerty
by Crosby, Gregory, & Co.

UNITED STATES PATENT OFFICE.

GEORGE F. FOGERTY, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO GEORGE FOGERTY, OF SAME PLACE.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 533,949, dated February 12, 1895.

Application filed March 21, 1894. Serial No. 504,572. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. FOGERTY, of Cambridge, county of Middlesex, State of Massachusetts, have invented an Improvement in Magazine-Guns, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide an improved magazine gun.

In devising my improved gun, I have sought to eliminate, as far as possible, all springs and spring actuated movements, and to otherwise change the arrangement and construction of the mechanism of the gun, to render the latter as simple, perfect and positive in its action, as possible.

One of the principal features of this my present invention is a cartridge transferrer for moving the cartridges singly from the magazine, located in the rear of the breech, forward toward the latter, and connecting devices between said transferrer and the reciprocating breech block, whereby backward movement of the latter causes forward transferring movement of the former. Suitable means are provided for disconnecting the transferrer from the breech block, at will, to enable the gun to be operated for single firing.

Other features of my invention will be fully hereinafter set forth and pointed out in the claims.

Figure 1 of the drawings, represents in left side elevation a portion of a magazine gun embodying my invention, sufficient to enable the same to be understood; Fig. 2, a right side elevation of the same, with the breech block drawn back; Fig. 3, a vertical longitudinal section of the gun Figs. 1 and 2. Fig. 4 on an enlarged scale is a top or plan view of the receiver containing the breech-block; Fig. 5, an under side view of a portion of the breech block; Figs. 6 and 7, vertical cross sections taken respectively on the dotted lines $x-x$ and $x'-x'$, Fig. 3; Figs. 8 and 9, perspective details of the front end of the breech block showing the ejector and feeding dog to be described, and Fig. 10, a cross sectional detail taken on the dotted line $y-y$, Fig. 3, showing the two lowest cartridges in the maga-

zine and the locking spring to prevent withdrawal of more than a single cartridge at a time.

Referring to the drawings, in the particular gun shown, the stock A, of suitable shape and construction, has secured to its front end the receiver B, the latter in turn having secured to its front end the fore-end C carrying the barrel C'. The receiver B at its upper side has suitable bearings for the sliding breech block b , said block, as herein shown, being formed of two members, the front member 1 being threaded upon the tubular neck 2 of the rear member 3, as best shown in Fig. 3. An annular pin seat b' , Fig. 3, is held between the end of the neck 2 of the member 3 and a shoulder 4 in the member 1, the firing pin c , having a shoulder c' , being normally pressed against the seat b' by a spring c^2 , the rear end c^3 of said pin at such time projecting rearwardly through the seat b' , as shown. When the firing pin is seated in this manner, its front end is flush with or inside the front face of the breech block, leaving said face perfectly smooth.

The pin actuator d , is fitted to slide in the member 3 of the breech block b , said actuator at its front end having an enlargement or head d' , between which and an annular lip b^2 on the interior of said member 3, is interposed the main spring s , which actuates the firing pin in a manner to be hereinafter described.

The breech block b , when in its rearmost position, as shown, is drawn back from the rear, open end of the barrel or breech to leave a space, as shown in Fig. 3, sufficient to permit a shell to be extracted, said breech-block being made longitudinally movable in order that it may be pushed forward into position immediately back of and abutting against the breech to close the latter.

Movement of the breech block is effected by means of a handle e mounted on or forming a part of a sleeve e' , surrounding and made rotatable on the neck 2 of the breech block.

The normal position of the breech block is forward with its end closing the rear end of the barrel, the handle e being at such time turned down into its horizontal position, as shown by dotted lines Fig. 6, the cam should-

der B' formed in the receiver, at such time preventing rearward movement of the breech block. By turning the handle *e* into its elevated full line position Figs. 3 and 6, said handle is brought in front of the end of a slot B² in the top of the receiver, which permits the said handle and breech-block to be drawn back, as shown in the drawings in full lines, the handle traveling in the said slot.

The breech block in the present construction has at its under side and preferably forming a part of it, a rack *f*, shown in Figs. 3, 5 and 6, said rack normally meshing with a pinion *f'* mounted loosely upon a shaft *f*² having its bearings in the side of the receiver B. The pinion *f'* at its under side meshing with a rack *f*³, slides in longitudinal guideways formed in the receiver B, said rack, as herein shown, having lateral guide ribs *f*⁴, which slide in corresponding ways in said receiver. See Fig. 6.

The cartridge magazine M is arranged upon one, preferably the left side of the receiver, as shown, the bottom of said magazine curving in to meet the inclined bottom *m*^x of the receiver. See Figs. 3 and 7. The open top of the magazine is normally closed by a plate cover *m'* hinged at *m*², said cover being acted upon by a spiral spring *m*³, shown in dotted lines Fig. 1, seated in a socket in the front end of the magazine, said spring acting upon the squared hinged lug of the cover, shown, to thereby retain the latter in either its open or closed position.

The cartridges to be fired, preferably carried in a suitable temporary holder or loader, are placed in the magazine M, as shown in Fig. 7, the lowermost cartridge always resting by gravity upon the bottom *m*^x of the receiver, which, as herein shown, forms a continuation of the wall or bottom of the magazine itself, it always holding the lowermost reserve cartridge.

By reference to Fig. 3 it will be seen that when the breech block is moved forward into position closing the end of the barrel, the rack *f*³ by reason of the pinion *f'*, will be moved rearwardly, and vice versa. When the breech block is drawn back, the rack *f*³ will be moved forward.

The rack *f*³ at its front end is provided with a spring-controlled finger or pusher *f*⁵, which when the said rack is drawn into its rearmost position by forward movement of the breech block, drops behind the lowermost cartridge in the magazine, so that when the rack *f*³ is subsequently moved forward by the drawing back of the breech block, the pusher *f*⁵ will push before it from the magazine, the lowermost cartridge, thereby permitting another to drop down to take its place. The cartridge thus moved forward is deposited in position immediately below the opening between the breech block and breech, and with its rim in front of the feeding device shown as a dog *t*, pivoted upon the depending end of the

slide-block *t'* mounted to slide in the end of the breech block at one side. See Fig. 8. When the breech block is drawn back, a shoulder *t*² in the receiver, strikes the slide block *t'* and pushes the same with its dog out from the front end of the breech-block, as in Fig. 9. When the breech-block is pushed forward to the breech, the dog strikes the rim of the cartridge previously deposited in front of it, and is forced back, pushing the slide block *t'* back into and with its end flush with the end of the breech block, as in Fig. 8, after which further forward movement of the breech block causes the said dog to push the cartridge referred to, see Fig. 3, up the incline *m*^x, until the cartridge reaches such a level that the breech block itself engages its rim and pushes it forward into the breech. It will thus be seen that the rack *f*³ constitutes one form of transferer, to transfer a cartridge from the magazine into position to be engaged and inserted in the barrel by forward movement of the breech block.

In order to prevent a loaded cartridge, when being inserted in the barrel, from coming in contact with the projecting firing pin *c*, said pin is withdrawn within the breech block by means of a cam surface *e*², at the under side of the sleeve *e'*. See Fig. 5. When the handle *e* is turned into its elevated position preparatory to drawing back the breech block, this cam surface co-operates with a slide-bar *e*³, mounted to slide in suitable guideways in the underside of the breech-block, and first pushes the said slide-bar back, causing its upturned end or lug *e*⁴, Fig. 3, to engage the enlarged end *d*² of the actuator *d* and push the latter back sufficiently to permit the spring *c*² to seat the firing pin *c* with its front end drawn back from the face of the breech block, the firing pin being retained by the cam *e*² in this position during the subsequent movements of the breech block while a cartridge is being inserted. This preliminary movement of the slide-bar *e*³, also causes its shoulder *n*^x to be caught and held by the sear *o* to be described, thus holding the gun at half cock, provided the breech block is not drawn farther and fully back.

When the breech block is moved from its position Fig. 3 forward into position closing the breech, the firing pin and its actuator are moved bodily with it until the breech block has almost finished its movement, when a shoulder *n* on the under side of the slide-bar *e*³ strikes against the sear *o* pivoted at *o'*, and is prevented from further forward movement, it also by its lug *e*⁴ preventing further forward movement of the actuator *d*. The handle *e* on the breech block is then turned down into its lowermost dotted position, Fig. 6, and in turning works against the cam shoulder B', which acts to force the handle and breech block farther forward a distance equal to the throw of the cam and against and closing the breech with the cartridge inserted. After the

actuator d has been stopped by the sear o , as described, this final longitudinal movement of the breech block, due to the turning down of the handle, acts to further compress the main spring s and cock the gun in readiness for firing. When the sear is moved out of engagement with the locking shoulder n on the slide bar e^3 by means of the usual trigger T , the main spring throws the said slide bar and actuator forward and causes the latter to strike the firing pin c and push the latter out from the front end of the breech block against the primer of the cartridge in the barrel to explode the cartridge.

When the breech block is withdrawn after the discharge of the gun, a shell extractor consisting of a flat spring plate r having a hooked end, as shown in Fig. 4, catches the rim of the shell and draws the latter out from the barrel and directly back until the slide-block t , Fig. 8, near the end of the drawing back movement of the breech block, strikes the shoulder t^2 and is forced out from the end of the breech-block and against the rim of the shell at one side, heeling said shell out, as in dotted lines Fig. 4, and throwing or ejecting it away from the gun at one side.

The end of the barrel is recessed slightly to permit the extractor to enter and engage the rim of the cartridge when the latter is inserted.

The operation of the gun is as follows, viz:— With the parts in the position shown in Figs. 2 and 3, the operator pushes the breech block b forward by means of the handle e until the latter reaches the front end of the slot B^2 in the receiver, such movement of the breech-block pushing the cartridge, previously deposited in front of it, into the barrel, the breech block, however, being preferably stopped a short distance from the end of the barrel before it has fully inserted the cartridge by the engaging of the slide bar e^3 , with the sear o . While the further movement of the breech block could if desired be effected by pushing upon the handle e , as before, yet as the main spring s is to be compressed by such further movement, such movement would be necessarily so hard that it is preferable not to attempt to push the breech block entirely forward against the barrel by a single pushing movement upon the handle e . Assuming therefore that the operator does not attempt to push the breech block farther forward after engagement of the slide-bar with the sear, he will immediately upon such engagement,—determined by the difference in force necessary to push the breech-block,—turn the handle e down to the right into its horizontal or dotted position Fig. 6, causing the cam face B' to push said handle and breech block farther forward to complete its movement and fully insert the cartridge, at the same time compressing the main spring, as described. The turning of the handle e into its horizontal position also by means of its

cam face e^2 , Fig. 5, releases the slide-bar e^3 , so that the latter cannot prevent subsequent forward movement of the actuator when the latter is released. This forward movement of the breech block has through the pinion f' carried the rack f^3 back, so that the pusher f^5 lies back of a new cartridge which has fallen to the bottom of the magazine M . The gun is now in readiness to fire, which is done by drawing back upon the trigger T , causing the latter to disengage the sear from the locking shoulder on the slide-bar e^3 , which when released permits the actuator to be immediately thrown forward by the spring s against the firing pin, causing the latter to strike the primer and explode the cartridge. The operator then turns the handle e into its upright position, and the breech block is drawn back into its rearmost position, withdrawing the shell, as described, the rack f^3 and its pusher being at the same time moved to push forward a new cartridge to be inserted in the breech by subsequent forward movement of the breech block as before.

Referring to Fig. 10, h is a spring stop which prevents more than one cartridge being fed out from the magazine at once, said spring moving back or yielding to permit the rim and larger rear end of the cartridge to pass as the latter is fed toward the breech.

If it is desired to operate the gun as a single firing gun, a suitable cut-off is provided whereby the magazine may be thrown out of action and kept as a reserve, such cut-off, as constructed in the gun shown, being illustrated particularly by Figs. 2 and 6. Referring to said figures, p is the cut-off handle projecting radially from one end of the pinion shaft f^2 , the latter, as shown, having its bearings at one end in the bushing p' , the head p^2 at its opposite end turning in a bearing in the side of the receiver. The pinion f' loosely journaled on this shaft, is shown recessed at one side to receive the spring seated against the bushing p' , said spring pressing the pinion normally to the left Fig. 6, into mesh with the rack f , and against the head p^2 , thereby pressing the said head and its shaft f^2 also to the left, to maintain said cut-off handle p in contact with the outer face of the bushing p' . Referring to Figs. 2 and 6, it will be seen that the outer face of the bushing p' is cam shaped or crowning, so that rotative movement of the handle p causes said handle to rise up on the said cam or crowning face and draw its shaft f^2 and pinion f' to the right (Fig. 6), removing the said pinion from engagement with the rack f , and throwing the magazine, feed, &c., out of gear. The gun may now be operated as a single firing gun.

By turning the handle p back again to its normal position, the spring will throw the shaft f^2 and its pinion, back again into engagement with the rack f . A flange or lip f^6 on the head p^2 of the shaft f^2 ,

prevents the latter and the pinion being moved into and out of mesh with the rack f , except when the said rack f is in its forward position, a gap f^7 in the teeth of the rack then permitting the shaft and pinion to be freely slid back and forth for engaging and disengaging the racks. By this arrangement the two racks must always be in the same relative positions when the pinion is moved into or out of mesh with the rack f and perfect timing of the mechanism is assured.

No springs whatever enter into the mechanism which takes the cartridges from the magazine and places them in the breech, all the movements being positive or by gravity.

While the principal feed of the cartridges in the magazine is by gravity, such feed may be assisted by a spring, though I prefer to omit said spring.

The magazine entrance is at the top and therefore easy of access, rendering it particularly easy for filling.

The firing pin c being normally seated against the annular seat d' , cannot be forced back by the explosion of the cartridge and break the main spring, as is frequently the case in guns as now commonly manufactured.

The mechanism consisting of the racks and pinion by which the cartridges are moved forward into position for insertion in the barrel, is absolutely positive in its action, simple in its construction, and of the fewest possible parts.

The inclined bottom or way m^x constitutes a simple means for raising or directing the cartridges into position to enter the breech as the said cartridges are pushed forward toward the breech.

While I prefer to employ a construction similar to that herein used to illustrate the essence of my invention, yet of course this invention is not restricted to the particular details of construction or arrangement of mechanism herein shown, for the same may be varied in many particulars and still come within the scope of the invention claimed.

I claim—

1. In a magazine gun, a barrel, a cartridge magazine having its outlet in the rear of the breech thereof, a reciprocating breech block, a cartridge transferer for moving the cartridges singly from the magazine toward said breech, and connecting devices between said breech block and transferer whereby backward movement of the former causes forward movement of the latter, substantially as described.

2. In a magazine gun, a barrel, a cartridge magazine having its outlet in the rear of the breech thereof, a reciprocating breech block to push the cartridges singly into the breech of said barrel, a cartridge transferer for moving the cartridges singly from said magazine toward said breech, connecting devices between said breech block and transferer, whereby backward movement of the former

causes forward transferring movement of the latter, and means to raise the cartridge so moved into position with its end directed toward and to enter said breech and in the path of movement of and to be acted upon by said breech block in its return or forward movement, substantially as described.

3. In a magazine gun, a barrel, a reciprocating breech block, and a rack movable therewith, a cartridge magazine, a cartridge transferer and a rack thereon, and a pinion between said racks, whereby movement of the breech block causes movement of said transferer, substantially as described.

4. In a magazine gun, a barrel, a reciprocating breech block, a cartridge magazine, a transferer, racks on the said breech block and transferer respectively, a pinion in mesh with the same, whereby the transferer is moved by the breech-block, and means to disengage said pinion and one of said racks at will, substantially as described.

5. In a magazine gun, a barrel, a cartridge magazine, a reciprocating breech block and a rack moved thereby; a cartridge transferer and a rack for moving the same; a pinion in mesh with said racks, whereby backward movement of said breech block causes forward transferring movement of said transferer, and a rotatable handle to effect movement of said pinion laterally to disconnect said racks, substantially as described.

6. In a magazine gun, a barrel; a cartridge magazine; a reciprocating breech block and a rack moved thereby; a cartridge transferer and a rack for moving the same; a pinion normally in engagement with said racks and movable to disengage the same therefrom; and means to lock said pinion against engaging and disengaging movement except when the said racks are in a certain fixed relative position, substantially as described.

7. In a magazine gun, a cartridge magazine; a barrel; a reciprocating breech block, a slide block, carried thereby and movable relatively thereto; and a movable feeding device mounted on said slide block and, adapted on forward movement of said breech block to engage a cartridge lying out of the path of movement of said block and push the said cartridge toward the breech of the barrel, said feeding device during backward movement of said block, moving to clear the next cartridge, substantially as described.

8. In a magazine gun, a barrel; a cartridge magazine arranged at one side thereof; an inclined guideway leading from the outlet of the said magazine upwardly toward the breech of the barrel; a transferer to move the cartridges from the magazine, up the inclined guide way, into position to be engaged during forward movement of the breech block; a reciprocating breech block, a rack thereon; a rack on the transferer, and an intermeshing pinion, whereby backward movement of the breech block causes forward or

transferring movement of the transferrer;
and a depending feeding device carried by
and movable with the breech block to engage
a cartridge in the position into which it was
5 left by the transferrer and push the said
cartridge forward into the breech of the bar-
rel, substantially as described.

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

GEORGE F. FOGERTY.

Witnesses:

GEO. W. GREGORY,
FREDERICK L. EMERY.