

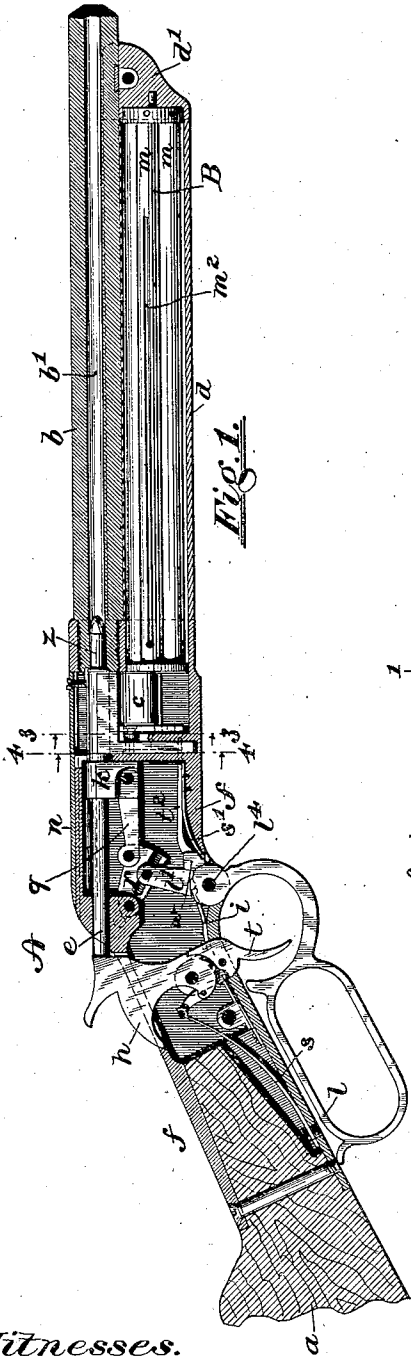
(No Model.)

3 Sheets—Sheet 1.

W. H. DAVENPORT.
MAGAZINE GUN.

No. 580,679.

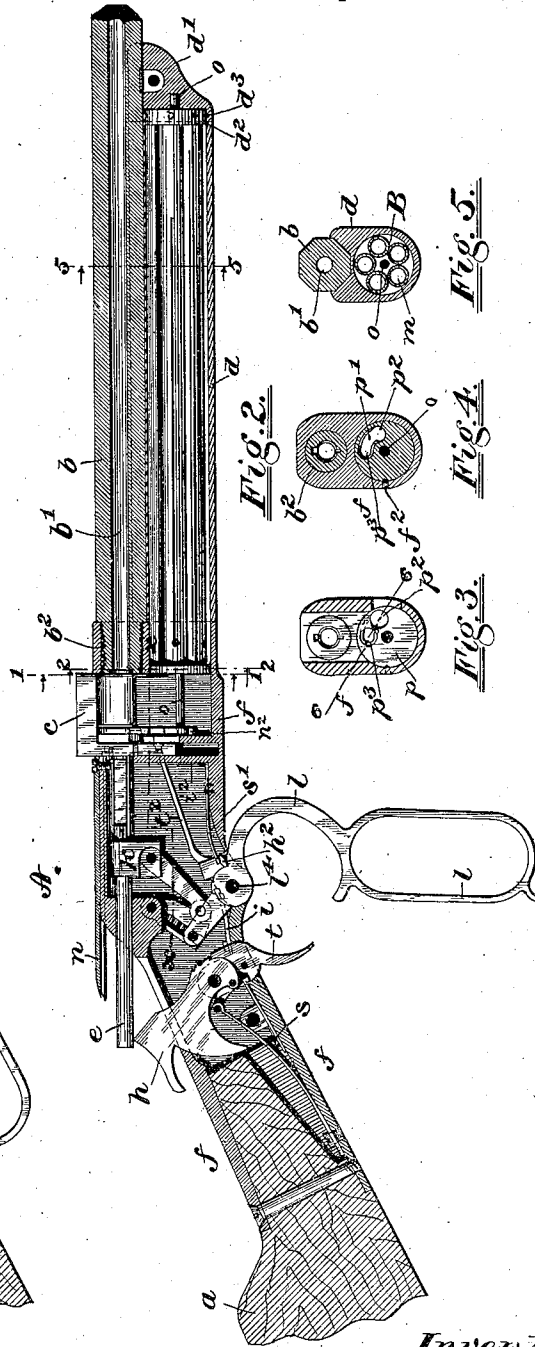
Patented Apr. 13, 1897.



Witnesses.

Fred. Arnold.

Harold Senior.



Inventor: _____

William H. Davenport.

by Remington Kenton
Atty.

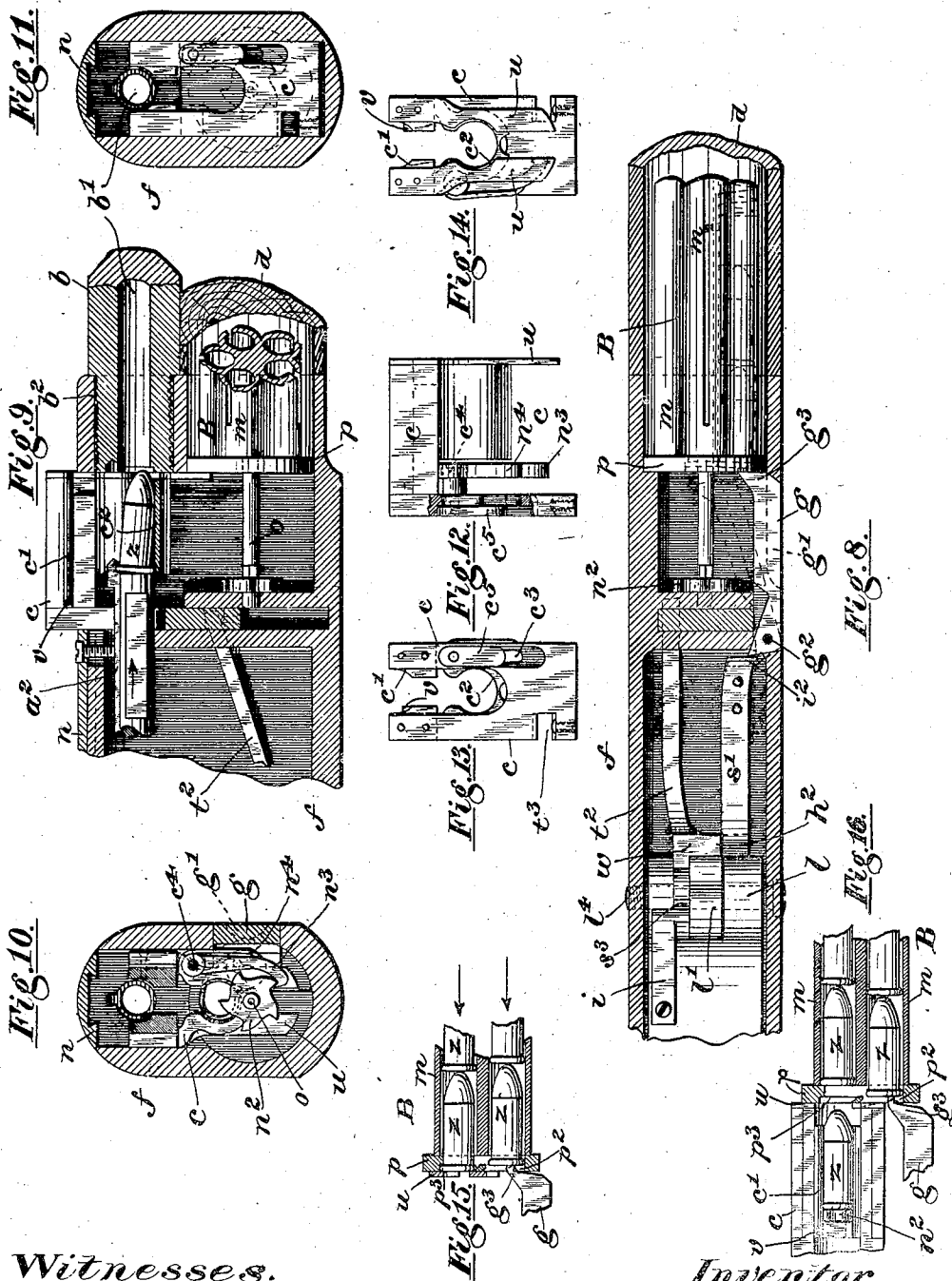
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3 Sheets—Sheet 3.

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by Erington & Henthorn
Attys

UNITED STATES PATENT OFFICE.

WILLIAM H. DAVENPORT, OF NORWICH, CONNECTICUT.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 580,679, dated April 13, 1897.

Application filed April 22, 1895. Serial No. 546,652. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DAVENPORT, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Magazine-Firearms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same; reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to magazine guns or firearms—that is to say, the class of breech-loading firearms in which cartridges are fed mechanically from a magazine into the gun-barrel.

The object I have in view is to produce a magazine firearm or rifle which will be comparatively light, efficient, strong, and capable of being easily and quickly operated and at the same time possessing great magazine capacity for the ammunition, the weight of the piece when fully charged being less than that of magazine-guns as usually constructed.

Another object of the invention is to produce or provide a novel device for intermittently feeding the cartridges from the magazine into the gun-barrel, the arrangement being such that a partial revolution of the magazine must always take place before the cartridge can be delivered or ejected therefrom into a carrier, which latter transfers it to the gun-barrel.

My invention consists in the novel construction and combination of parts and devices, as will be more particularly hereinafter set forth, and pointed out in the claims.

By means of my improvement the act of opening and closing the gun through the medium of the usual operating or guard lever automatically ejects the empty shell from the barrel, cocks the hammer, elevates the cartridge-carrier and places a new cartridge in position in the barrel, rotates the magazine, retracts the carrier to its normal position, and delivers the next succeeding cartridge from the magazine into the carrier prepar-

tory to being introduced into the barrel after the next discharge.

In the accompanying three sheets of drawings, Figure 1, Sheet 1, is a longitudinal central section, in partial elevation, showing the essential features of my improved magazine-firearm, the several parts being in the normal position. Fig. 2 is a similar view, the gun being open, the relation of the parts being such that a cartridge stands in position ready to be introduced into the barrel during the act of closing the gun. Fig. 3 is a transverse section taken on line 1 1 of Fig. 2. Fig. 4 is a similar section taken on line 2 2 of Fig. 2. Fig. 5 is a cross-section taken on line 5 5 of Fig. 2. Fig. 6, Sheet 2, is a longitudinal central section, enlarged, taken through the frame and rear end of the magazine, the relation of the parts corresponding with Fig. 1. Fig. 7 is a similar section of the same, the breech-block, however, being retracted and in the act of ejecting the empty shell from the gun. Fig. 8, Sheet 3, is a horizontal section, enlarged, taken substantially on line *x x*, Fig. 2, the magazine being in elevation and showing the relation of the filling or loading cover thereto. Fig. 9 is an enlarged section corresponding to Fig. 2, showing the carrier-block, &c., at the instant of introducing a cartridge into the gun-barrel. Fig. 10 is a transverse section, enlarged, taken on line 3 3 of Fig. 1, the breech-block being omitted. Fig. 11 is a similar section taken on line 4 4 of Fig. 1. Fig. 12 is a side view of the carrier-block detached from the gun. Fig. 13 is a rear end view of it. Fig. 14 is a front view. Fig. 15 is an enlarged horizontal section taken substantially on line 6 6 of Fig. 3; and Fig. 16 is a view similar to Fig. 15, showing the magazine turned one-fifth of a revolution, the cartridge being fed into the carrier.

I would state that the form and arrangement of the gun-barrel *b* and breech-stock *a* are or may be made substantially as common to guns or firearms of the breech-loading type. So, also, are the pivoted hammer *h*, trigger *t*, and mainspring *s*, all mounted in the frame *f*. The said frame has the stock *a* secured to its rear end and the barrel *b* to its front end in any suitable manner. As drawn,

the rear end b' of the gun-barrel is reduced in diameter and is screwed into the frame f .

To the under side of the rear portion of the barrel b and parallel therewith is secured a casing d , of wood, the same having a chamber formed centrally therein to receive the magazine B about to be described. The forward end of the casing is covered or protected by a cap d' , secured to the barrel, said cap being counterbored to receive the closed forward end or flange d^2 of the magazine and also the forward portion of the supporting-spindle o , as shown in Fig. 2. The said magazine or reservoir B is revoluble and is composed of a series of circularly-arranged parallel tubes m , secured together. As drawn, it consists of five tubes closed at the front end and open at the opposite end. The magazine is rigidly secured to a central axle or spindle o , the latter having at its rear end a five-toothed ratchet-wheel n^2 secured thereto, through which motion is imparted to the magazine. Each tube-chamber is adapted to receive a number of cartridges z . These are placed end to end and are maintained in endwise-yielding contact through the medium of a guided follower m' and spring m^2 , movably mounted in the forward portion of the tube.

The magazine may be rotated independently of the operating mechanism by means of a short handle (not shown) adapted to be removably inserted into holes d^3 , formed in the periphery of the said flange d^2 .

At the rear end of the magazine is located in the frame a fixed plate or disk p , the same practically closing the corresponding ends of the several tubes m , the said spindle o extending centrally therethrough. The disk is prevented from turning and is kept in place by a screw f^2 , tapped into the frame. (See Fig. 4.) The plate is provided with an elongated segmental opening p' , through which the cartridges are both fed into and from the magazine. This opening is formed in the upper portion of the plate and extends circularly from the upper tube to the next succeeding tube and is adapted to communicate with both the said tubes. (See Figs. 3, 4, 15, and 16.) The rear portion p^2 of said opening p' , considered with respect to the direction of rotation of the magazine, is adapted to pass cartridges therethrough freely, as in loading or charging the magazine, while the forward portion p^3 , through which the cartridges are fed from the magazine to the carrier-block, is reduced in diameter—that is to say, the hole p^3 is counterbored from the back to freely receive the enlarged or rim portion of a cartridge, but will not permit it to pass directly through the plate. Thus it will be seen, assuming the parts to be in the normal position, (shown in Fig. 16,) that the next cartridge to be fed from the magazine to the carrier will be the rearmost one in the tube opposite the rear hole p^2 , so that upon rotating the magazine one-fifth of a revolution said tube will

be advanced and brought opposite the forward hole p^3 . Now during this movement the end of the cartridge will slide along the opening p' , and at the same time, by means of the spring m^2 , it will become automatically transferred from the hole p^2 to the enlarged portion of the intercommunicating hole p^3 , ready to be delivered into the carrier upon withdrawing the stop or spring-cover u . (See Fig. 15.)

The frame f is provided with a vertical opening or chamber formed at the rear end of the barrel in which the carrier-block, soon to be described, is movably mounted. Said opening is closed by a longitudinally-sliding cover n , its outer surface forming a continuation of the frame itself, as clearly shown. The frame is further provided with a side opening, arranged at substantially right angles with the first-named opening, which I term the "loading-opening," in which is fitted a swinging cover g , pivoted at g^2 to the frame. (See Figs. 8 and 10.) The forward end g^3 of the cover g when normal is adapted to engage the rear end of the adjacent cartridge after the latter has taken its initial movement in the hole p^2 of the opening p' of plate p , thereby successively holding the cartridges in position as the magazine is rotated. The opposite or rear end of the cover is resisted by the vertical spring i^2 , thus rendering the cover self-closing. When the carrier is raised to a certain point, the cover g may be pressed inwardly, so that cartridges can be passed from the filling-groove g' (shown by dotted lines in Figs. 8 and 10) into the reservoir-chambers, as in charging the magazine.

The carrier-block c is nicely fitted and guided to work vertically in the opening formed in the frame at rear end of barrel. The carrier is provided with two horizontal seats arranged one over the other, the upper one, c' , when the carrier is in its lowest or normal position, coinciding with the bore b' of the gun-barrel, the lower seat c^2 at the same time coinciding with the outlet-opening p^3 of the plate p , through which the cartridges are fed singly from the magazine to the carrier. The rear end of the carrier is provided at its right side with a vertical slot c^3 , in which a block or piece c^5 is slidably fitted. Said piece c^5 carries at its upper end a stud or pivot c^4 , on which the pawl n^3 swings. The lower end of the pawl is hook-shaped and is kept in contact with the teeth of the ratchet-wheel n^2 , before referred to, by means of a spring n^4 , secured to the carrier.

By means of the arrangement just described it will be apparent that the magazine will not be rotated until the upward movement of the carrier c causes the lower end of the slot c^3 to engage the corresponding end of the block c^5 , at which instant all the parts will commence to move in unison, the further upward movement of the carrier to its limit causing the

pawl to rotate the wheel n^2 and magazine one-fifth of a revolution. The front end of the carrier is provided with a slightly-yielding plate or cover u , its central portion being cut away and forming substantially a continuation of the lower seat c^2 . The lower portion is divided laterally, so as to freely pass either side of the spindle o , the ends forming a stop to prevent the escape of cartridges from the magazine while the carrier is in its elevated position. (See Figs. 9 and 15.)

The carrier-block is actuated by a guard or operating lever l through the medium of an intermediate lever l^2 , the outer or free end of the latter being mounted in a side notch f^2 , formed in the front end of the block. The hub portion w of lever l^2 is supported by and fitted to turn on the fixed screw l^4 , forming the pivot or fulcrum of the guard-lever l . The said hub w is provided with a lateral extension or dog h^2 , carrying the free end of a comparatively stiff spring s' , Fig. 2. The under side of the extension is flattened and adapted to contact with a similar surface h^3 , (see also Figs. 6 and 7,) forming a part of the lever l and arranged to move in a circular path. The hub w is also provided with two peripheral notches s^3 , (shown by dotted lines in Figs. 2, 6, and 7,) adapted to receive the free end of a flat spring i . The relation of these notches is such that the spring i operates to hold the lever l^2 in both its elevated and depressed positions.

From the foregoing it will be seen that in swinging or dropping the lever l to its limit, as in opening the gun, it will engage the dog h^2 and thus force the lever l^2 and the connected carrier-block upwardly to the position shown in Figs. 2 and 9. The spring s' returns the lever l^2 and carrier to the normal position simultaneously with the act of retracting lever l .

The breech-block mechanism is also actuated by the guard-lever l . The breech-block proper, k , is provided with a suitably-guided forward annular extension k' , arranged at the rear of and in alinement with the bore of the barrel b , as clearly shown in Fig. 6, &c. Said part k' is flattened on opposite sides to permit the carrier to freely pass by it at certain parts of the action. As drawn, the rear end of the barrel is counterbored to receive the forward end of the part k' . The block k is counterbored rearwardly and has an enlarged firing-pin e inserted therein. Said pin is capable of a short independent endwise movement, a pin or screw e^4 serving to secure both parts together. The rear portion of the member e is slidably fitted into and extends through the frame and is adapted to be acted upon by the hammer h . The opposite end portion e' of the pin e is reduced in diameter and extends into the annular portion of the breech-block, where it contacts with a shorter piece e^2 , forming the firing-pin proper. A screw e^3 main-

tains the piece e^2 in position, while permitting a degree of endwise movement.

The guard-lever l extends into the frame f and is provided with a short arm l' , in the upper end of which latter is fitted a pin r^5 , whose head is adapted to slide in a slot r^4 , formed in a swinging arm r , pivoted at r' to the frame. An end of a link q is jointed at r^2 to said arm r , its other end being jointed at r^3 to the breech-block k , the arrangement or relation of the said pins r' , r^2 , and r^3 being such that they form a toggle-joint connection, the centers thereof when the gun is closed being in a plane common to all and substantially parallel with that of the breech-block.

The breech-block is provided with a slightly-yielding shell-extractor a^2 , its forward end being notched and adapted to engage the rim of the cartridge. (See Fig. 6.) As drawn, it is connected with a screw e^5 , passing through the sliding breech-cover n , the arrangement being such that the act of withdrawing or retracting the breech-block operates also to actuate the cover, thereby automatically uncovering the top opening in the frame.

Assuming the several parts of my improved firearm to be in the normal position substantially as represented in Fig. 1, the operation of firing and recharging the barrel from the magazine is as follows:

The cartridge is first exploded through the medium of the hammer and firing-pin substantially as usual, after which the operator quickly drops the guard-lever l to its limit. The first part of said movement retracts the breech-block, thereby simultaneously uncovering the frame, withdrawing the cartridge-shell and ejecting it, (by means of its sudden engagement with the stop-pin v in the upper seat of the carrier,) and cocking the hammer, all as represented in Fig. 7. The latter part of the lever's said movement, as in carrying it to its limit, elevates the carrier-block and places a new cartridge in position preparatory to being inserted into the barrel, at the same time rotating the magazine one-fifth of a revolution, closing the feed-outlet p^3 thereof, and bringing the next succeeding cartridge into place to be delivered to the carrier c upon its return. (See Figs. 2 and 9.) It is to be noted that the spring i meanwhile is in engagement with the second notch—that is, the notch nearest the spring s' . The operator now at one movement returns the guard-lever l to its normal position. The first part of said movement advances the breech-block and pushes the cartridge resting on the upper seat c' endwise from the carrier into the bore of the gun-barrel, at which instant the forward side of the arm l' in its angular movement engages the adjacent side of the hub w of the lever l^2 and forces the latter from the retaining-spring i , thereby in conjunction with the spring s' forcing the carrier c downwardly to its normal position, the end of the pawl n^3 in its de-

scent sliding freely past the wheel n^2 and springs into engagement with its lowest tooth. At this instant, too, the cover or cap u of the carrier will uncover the adjacent opening or feed-outlet p^3 of the disk p , thereby wholly releasing the contiguous spring-resisted cartridge, which is then delivered with pressure from the magazine endwise onto the lower seat c^2 of the carrier, where it is arrested by the wheel n^2 , extending upwardly into the said carrier-seat. (See Fig. 16.) The final part of the closing movement forces the cartridge to its seat in the barrel, the head of the extractor member a^2 at the same time yielding to receive the rim of the cartridge, thereby completing the operation. Figs. 1 and 6 show the corresponding relation of the parts. The hammer, however, would be left in the full-cock position.

I claim as my invention and desire to secure by United States Letters Patent—

1. In a magazine-firearm, the combination of an intermittingly-revoluble magazine consisting of a series of tubes m arranged around a common center, resilient followers mounted in the tubes, and a fixed plate p closing the rear end of the magazine; said plate having an elongated opening p' therethrough communicating with the rear end of two contiguous tubes, one part p^2 of said opening being adapted to freely receive the cartridges, as in loading the magazine, the other part p^3 of the opening having an inwardly-extending circularly-arranged rib or flange, arranged whereby upon turning the magazine the rear end of the next succeeding cartridge will be deflected past said rib, thereby bringing it into position ready to be ejected into the carrier-block when the latter is depressed to its limit, substantially as described.

2. In a magazine-firearm, the combination with a rotatable multichambered magazine and a movable carrier-block, constructed and arranged with relation to each other substantially as hereinbefore described, of the fixed plate or head p interposed between the adjacent ends of the magazine and carrier-block, said plate having an intercommunicating loading and feeding opening formed there-through communicating with two contiguous chambers of the magazine, a vertical cover or cap u secured to the front end of the carrier-block extending downward across said plate-opening while the cartridge is being transferred from the block into the barrel, and a swinging cover g having its free end extending through the plate-opening to hold the contiguous cartridge in position until the magazine is again rotated, substantially as described.

3. In a magazine-firearm, a suitably-mounted fixed plate or head p , arranged to communicate with a rotary magazine having a series of chambers, said plate having an elongated or slotted opening p' formed therein, through one portion p^2 of which opening cartridges

may be passed freely into the contiguous magazine-chamber, as in loading or charging the magazine, the other portion p^3 being counterbored from the rear side to prevent the escape of cartridges from the adjacent chamber, said portions of the opening being intercommunicating and capable of receiving the rim or enlarged end of a cartridge from a charged chamber rearwardly into the portion p^2 against a suitable stop, so that upon turning the magazine axially the said rim part of the cartridge is carried around in the slot and into the counterbored portion p^3 , the cartridge then being ready to be taken and delivered into the gun barrel.

4. In a magazine-firearm, the combination of a suitably-mounted revoluble multichambered magazine, a shaft fixed to the magazine, a ratchet-wheel secured to the shaft, a reciprocating carrier-block, a spring-pawl jointed to said block and in engagement with said ratchet-wheel, a swinging guard or operating lever, and a connection or intermediate lever engaging the carrier-block, arranged whereby the act of dropping the guard-lever actuates the intermediate lever to elevate the carrier-block and at the same time to rotate the magazine, substantially as and for the purpose set forth.

5. In a magazine-firearm, the combination with the revoluble magazine provided with a ratchet-wheel, and a fixed apertured plate covering the mouth of the magazine, of the carrier-block member, substantially as described, having two intercommunicating seats arranged in different horizontal planes, one above the other, a pawl slidably mounted in the rear end portion of the block capable of engaging said wheel, and having the opposite or forward end of the block provided with a downwardly-extending spring-plate, for the purpose hereinbefore set forth.

6. The improved magazine-firearm, substantially as hereinbefore described, the same consisting essentially of a barrel and breech-stock, a frame uniting them, a spring-resisted hammer and trigger mounted in said frame, a multichambered revoluble magazine mounted below and parallel with the barrel, a ratchet-wheel through which the magazine is revolved, a vertically-movable double-seated carrier-block arranged to communicate with and rotate the magazine, a vertically-slidable spring-pawl mounted in said carrier-block adapted to engage said ratchet-wheel, a fixed plate or disk having an opening therein through which cartridges are introduced into and delivered from the magazine, said plate being interposed between the adjacent ends of the carrier-block and magazine, a self-closing pivotally-mounted loading-cover filling an opening formed in the side of the frame and communicating with the magazine, a slidable cover closing an opening formed in the frame above the carrier-block, a movable breech-block, provided with a shell-extractor

and firing-pin, mounted at the rear of and in line with the barrel's axis and attached to said slidable cover, a pivotally-mounted resilient lever or connection connected with the carrier-block for actuating the latter, a swinging guard-lever having an inner arm, and suitable connections uniting the said breech-block and guard-lever, all combined and

adapted for operation substantially as shown and described and for the purposes set forth. 10

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM H. DAVENPORT.

Witnesses:

GEO. H. REMINGTON,
FREDERIC ARNOLD.