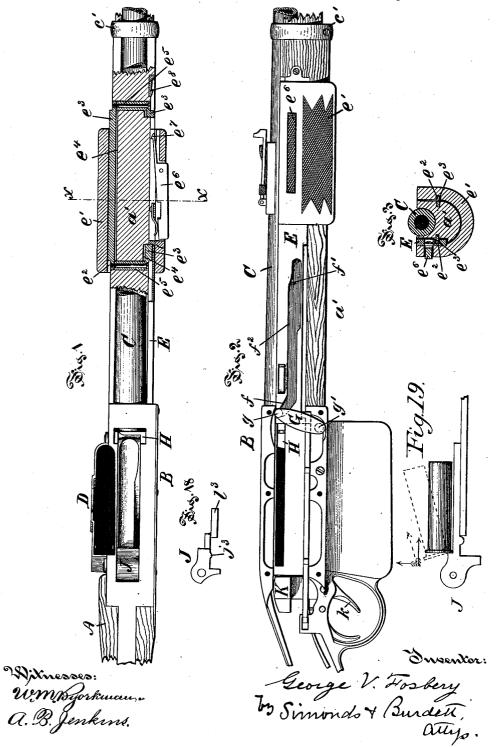
## G. V. FOSBERY.

MAGAZINE GUN.

No. 366,211.

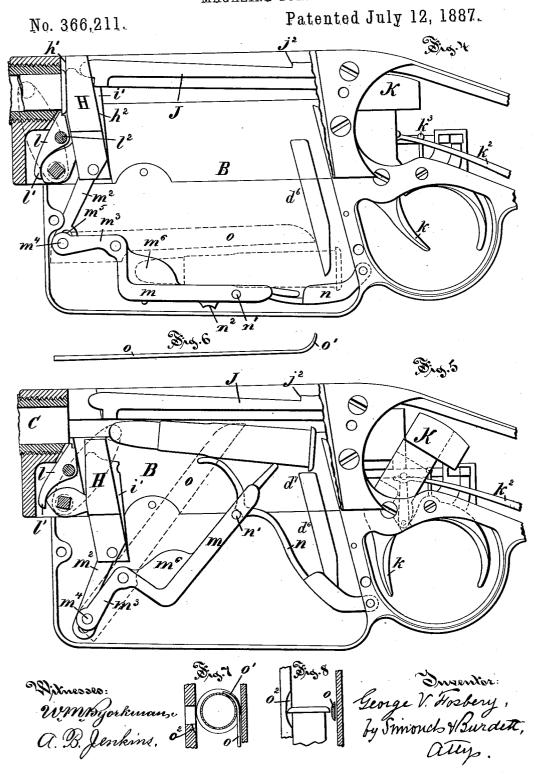
Patented July 12, 1887.



(No Model.)

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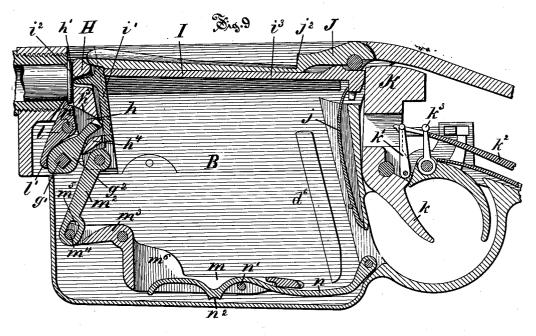


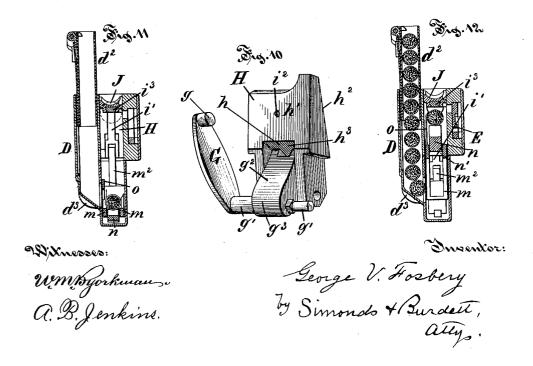
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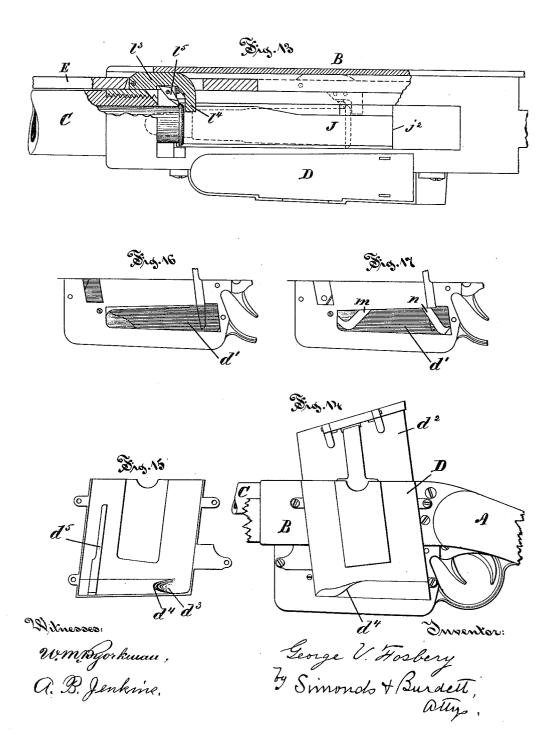


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# UNITED STATES PATENT OFFICE.

GEORGE V. FOSBERY, OF WESTON-SUPER-MARE, COUNTY OF SOMERSET, ENGLAND.

#### MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 366,211, dated July 12, 1887.

Application filed August 25, 1886. Serial No 211,787. (No model.) Patented in England July 20, 1885, No. 8,746.

To all whom it may concern:

Be it known that I, George Vincent Fos-BERY, of Weston-super-Mare, in the county of Somerset, Eugland, have invented certain 5 new and useful Improvements in Magazine-Guns, (certain features of the same having been patented by me in Great Britain under date of July 20, 1885, and No. 8,746,) of which the following is a full, clear, and exact deto scription, whereby any one skilled in the art can make and use the same.

My invention relates to the class of smallarms in connection with which a magazine is used that is adapted to hold, for supply to the 15 barrel, a plural number of cartridges.

The object of my invention is to provide a magazine gun of the type in which the cartridges are held in the magazine so that they are fed to the gun in a direction across the 20 plane of the axis of the gun, as distinguished from the type in which a tubular magazine is

My invention consists, broadly, in a gun having a feed-case adapted to carry a plural 25 number of cartridges, and preferably built into the gun, in combination with the positive-feed mechanism for lifting each cartridge in succession into position to be thrust directly into the gun-barrel, and in the locking device by 30 means of which the cartridge is held at its highest position until its rear end as it is fed into the barrel has passed the forward end of the supporting lever.

It further consists in these feed-levers, that 35 are operated by the movement of the breechblock, to which one of them is linked, in the guard that operates in combination with the feed levers for the purpose of withdrawing the cartridges in case the upward motion of 40 the feed-levers should be reversed before the cartridge reaches the proper position for loading into the gun, and in the sectional firing pin having one part borne in the breech-block, so that it is carried out of line with the other sec-45 tion until the gun is loaded.

It further consists in the extractor mechanism made up of a starter and an ejector that are operated by parts not directly connected, and in a measure independent of each other.

cates in the line of the axis of the gun, in combination with a breech block that is moved across said axis in opening and closing the breech of the gun.

It further consists in the slide having a non- 55 conducting handle supported on ways that are practically independent of the stock in which they are socketed, so as to prevent the shrinking or swelling of the material of the stock from affecting the distance between their 60 parallel bearing edges or faces.

It further consists in the slide bearing a cam that operates the breech-block through the intervention of the breech-block lever.

It also consists in the combination of such 65 slide with the extractor mechanism; and it also consists in details of the several parts making up the feeding, retracting, loading, cocking, firing, and extracting mechanism, and in the safety devices and their combina- 70 tion, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a top view of part of the gun, from the lower band to the small of the stock, embodying my in 75 vention, with parts cut away to show the construction. Fig. 2 is a view in elevation of the right-hand side of the gun. Fig. 3 is a detail view in cross section of the gun through the slide and ways on plane denoted by the line 80 XX of Fig. 1. Fig. 4 is a detail view, on enlarged scale, of the receiver and its contained mechanism, showing the breech block closing Fig. 5 is a detail view of the rethe breech. ceiver and the mechanism with the breech 85 open and the block at the lower limit of its Fig. 6 is a detail top view of the guard. Fig. 7 is a detail view in cross section through the upper part of the receiver and a cartridge, looking toward the stock of the gun and show- 92 ing the position of the upper end of the retractor at the upper limit of its play. Fig. 8 is a detail top view illustrating the device for allowing the flange of the cartridge to slip past the receiver. Fig. 9 is a detail view in 95 central longitudinal section through the receiver and the operating mechanism of the gun. Fig. 10 is a detail perspective view of the breech block and the breech block lever. It further consists in the slide that recipro- | Fig. 11 is a detail view in cross-section through 100

the magazine and receiver of the gun, showing the cartridge-feeding levers at the lowest limit of their play. Fig. 12 is a detail view in cross section through the magazine and receiver of the gun, showing the cartridge-feeding levers at the upper limit of their play. Fig. 13 is a detail top view of part of the gun to illustrate the operation of the extractor mechanism. Fig. 14 is a detail view of the 10 left side of the gun, showing the magazine and hopper. Fig. 15 is a detail view of the inner face of the magazine, shown removed from the Fig. 16 is a detail diagram view showing the opening in the wall of the receiver to admit a cartridge. Fig. 17 is a view of the same part, showing the cartridge-feeding levers acting as a guide to prevent the introduction of a cartridge. Fig. 18 is a detail diagram view in side elevation of part of the switch, 20 showing the cam used in throwing the empty shell clear of the gun. Fig. 19 is a detail diagram view illustrating the operation of the ejector, showing the switch, and cam on it, and the projection on the slide.

In the accompanying drawings, the letter A denotes the stock of the gun; a', the foreend; B, the receiver or shoe, the chamber being extended by a box-like narrow extension directly beneath the axis of the gun; C, the 30 barrel of the gun, that is secured to the receiver in the usual manner at the breech end, and to the fore end of the stock by means of a band, c', and D the magazine as a whole. On the right side of the gun the receiver is 35 cut away to form a narrow longitudinal channel, in which the slide E, that extends in a channel along the side of the fore end, is movable back and forth longitudinally in the line of the barrel of the gun. To the outer end of 40 this slide is secured a handle, e', that is either made of or covered with a material that is a non conductor of heat, and this handle has grooves  $e^2$ , into which project the ways  $e^3$ , on which the handle is supported in its sliding 45 movement. These ways are placed in sockets e' along the side of the fore end, and are supported at their opposite ends on metallic posts or standards e, that extend completely through the fore-end and hold the ways out of contact 50 with the substance of the fore end. This construction prevents the alternate swelling and shrinking of the wooden fore end from at all affecting the parallelism of the outer edges of The part of the handle that is in the ways. 55 contact with these ways is preferably part of a metallic frame on which the handle is formed. The slide is provided with a spring-latch,  $e^{\epsilon}$ , that has a hooked end, e7, that at the forward limit of the play of the handle engages a hook, 5c e, fast to the fore end, and thus locks the handle against a return-slide until the latch is released, as by the pressure of the fingers upon its outer face. On the slide E are formed the cams ff', with the straight portion or dwell  $f^2$  be-

65 tween them. The breech block lever G is piv-

oted to the front end of the receiver in such

of these cams that are borne on the slide, so that the latter in its reciprocating movements causes this lever to rock back and forth on its 70 pivot g'. An inner arm, g', of this lever lies within the receiver and projects into a socket, h, in the breech-block H. (See Figs. 9 and 10.) This breech-block has a vertical face, h', that, in the raised position of the breech-block, 75 is pressed forcibly against the head end of a cartridge when the gun is loaded, while the rear side,  $h^2$ , of the block is sloped backward at an angle from the face and lies against sloping ways formed in the opposite walls of the re- 80 ceiver, so that as soon as the breech-block begins its downward movement its front face, h' moves backward from the breech-chamber and out of contact with the head of the cartridge. This backward movement is contemporaneous 85 with the downward movement of the block, and this construction adds to the ease of movement of the block. These ways are shown in top view in Fig. 1, and the part on the inner wall of the right side of the receiver is shown 90 in elevation in the detail view in Fig. 5, and a comparison of the positions of the view in Fig. 4, that shows the breech-block in its elevated position, with the view in Fig. 5, where the breech-block is shown at the lower limit 95 of its play, will give a clear idea of the location and office of these sloping ways. The breech-block supports one section, i', of the sectional firing pin, this section i being pivoted to the breech block, as shown in Fig. 9, with 100 a striker, i, that projects through an opening in the block, which, when the latter is in its raised position, is directly opposite the primer of the cartridge. The other section,  $i^3$ , of the firing-pin is supported in guides on the under 105 side of the switch J, with its rear end in po-sition to be struck by the hammer K, to discharge a cartridge only when the breech-block completely closes the breech and backs up the cartridge. This switch J lies along the upper 110 side of the receiver and partially closes the chamber therein, being pivoted at its rear end and having sufficient vertical play of its front end to allow it to lie alternately above and below the opening in the breech chamber as the 115 breech block is raised and lowered. The front end of the switch rests upon the top of the breech block, and follows the latter in its upand down movement, for a purpose that will hereinafter be explained. The switch spring 12c j is secured within the receiver against the rear wall of the chamber and presses with its free end against a tail on the switch, so as to tend to depress the front end of the latter, and this spring also serves to hold at the backward 12. limit of its play the section  $i^3$  of the firing pin. (See Fig. 9.) The hammer K is pivoted to the back part of the receiver or shoe, so as to be wholly inclosed within the shoe and stock, except as to its lower end, k, that projects within 130 the trigger-guard, where it serves as one means of cocking the gun. The strap k' connects the hammer with the main spring k', while the position that a pin, g, projects into the path | yoke k³ limits the upward pull of the spring

upon the hammer, so that the latter is held in its normal position with its striking-face loosely against the rear end of the firing-pin, thus forming the rebounding feature.

The arm  $g^{\bar{z}}$  of the breech-block lever has several important functions. When the breechblock is in its upper position, the free end of the arm lies in the socket h in the breech-block against the upper wall, h3, of such socket, so 10 that this lever arm forms a brace that effectually locks it and prevents any downward movement of the breech-block until the end of the arm is removed from contact with this (See Figs. 9 and 10.) The free end wall  $h^3$ . 15 of this lever arm  $g^2$  as it swings downward strikes against the section i' of the firing pin and withdraws the striker, while the under side of the lever arm comes in contact with the under wall, h4, of the socket with a gradually-20 decreasing leverage, the movement of the arm g<sup>2</sup> causing the breech block to be moved with great force at the beginning of its movement, and afterward with less force, but greater rapidity. The rearend of this lever arm is shaped 25 to form a cam,  $g^2$ , that, by contact with the arm l' of the starter l, swings the latter on the pin  $l^2$ . The upper end of this starter is notched, and lies in close contact with the front edge of the flange of the cartridge when the gun is loaded. 30 This forms a novel and very powerful means of beginning the extraction of the cartridge, the further extraction being accomplished by means of the extractor I, that is borne on the This extractor-finger  $l^3$  is so pivoted slide E. 35 to the slide as to swing toward and from the receiver-chamber. It is pivoted to the slide at such a point that it will be in contact with the side wall of the receiver and have its hooked end l' thrown in in time to catch the 40 rim of a cartridge between the hook l' and the tilting finger b, and as the backward movement of the slide is continued a cartridge is slid along on the upper surface of the switch J until an abutment,  $j^2$ , on the switch is en-45 countered, and against this abutment the head of the cartridge strikes forcibly at the instant when the end of the extractor-finger, by contact with the cam j<sup>3</sup> on the under side of the switch near its rear end, (see Fig. 18,) causes 50 a quick upward flip to be given to the free end of the switch. The result of these two forcesthe upward flip given by the switch and the rebounding of the shell from the abutmentcauses the shell to be thrown violently upward 55 and forward on an angle of about thirty de-This forward throwing of the cartridge-shell is a novelty, and is peculiarly my improvement. Of course it is understood that the rotation of this arm  $g^2$  of the lever is pro-60 duced by the backward movement of the slide. while its forward movement raises the breechblock again and closes the breech. The function of the cam f is to swing back the lever G a sufficient distance to partially lower the 65 breech-block, leaving its upper end, however, at a sufficient height to check the shell in case

the starter throws it violently out, and this

insures a grasping of the flange by the extractor-finger, that then completes the removal of the cartridge in the manner already degraphed

scribed. Cartridge-feeding mechanism.—After a cartridge has entered the receiver, it is lifted into position for loading into the gun by means of the cartridge-feeding levers m n, that are piv- 75 oted within the receiver and lie along its bottom part. (See Figs. 4, 5, and 9.) The breechblock is connected by the link m2 to the short arm  $m^3$  of the lever by a pin,  $m^4$ , that passes through the slot  $m^5$  in the link. This lever m 80 is bent so that the longer arm lies below the plane of the shorter arm, and this longer arm is forked and also has a flange that forms a stop,  $m^6$ , on the side of the lever opposite to the opening through which the cartridge is 85 fed into the receiver. The function of this stop is to narrow up the lever at this part, so that a cartridge with a bullet smaller in diameter than the body of the cartridge may be fed into the receiver without the possibility of 90 two cartridges effecting a lodgment on the lever at the same time. A lever, n, is pivoted at one end to the rear wall of the receiver and extends toward the lever m, and lies between the forked arms, resting on the pin 95 n', and having on its under side at a point beyound this pin a notch,  $n^2$ , in a portion of the lever that curves downward below the pin. The effect of this construction and arrangement of the parts is that when the breech block is 100 moved downward the lever m is rocked upon its pivot and the longer arm is lifted, carrying with it the lever n for a distance depending upon the degree of movement of the breechblock. When a cartridge is fed from the 105 magazine into the receiver, it rolls upon the upper sides of these levers mn and lies in about the position indicated by the dotted outline in Fig. 4. The function of the slot m<sup>5</sup> is simply to shorten the motion of the short arm of the 110 lever, while maintaining a certain leverage. The cartridge is held about midway of the re-ceiver while the slide is completing its back-ward motion, until the cam f' comes into play to further depress the breech block, and by 115 these means lift the cartridge to the position shown in Fig. 5. At this moment the notch in the lever n engages the pin in the lever m, and this locks the levers in their raised position. By the forward movement of the slide 120 E the extractor-finger l3 is moved forward until it engages the flange of the cartridge, which it pulls forward (see Fig. 13) and carries into the chamber of the gun to a position corresponding to that occupied by the shell when 125 the extractor-finger engages it—that is, with its flanged end just in front of the plane of the front wall of the breech-block in its lowest po-

sition. The loading is concluded by the for-

crowds the cartridge firmly into the chamber.

To the side of the lever m is attached a guard, o, (see Fig. 6)—that is, a thin blade of metal

with a curved end, o'-so attached to the lever

ward movement of the breech - block, that 130

that its end will overlie the top of the cartridge when the latter is being lifted in the receiver-chamber. In order that the flange of the cartridge shall not strike against the edge of 5 this guard in loading the gun, the wall of the receiver opposite the guard is cut away and forms a recess, o2, that permits the flanged head to slip past the guard o. (See Figs. 7 and 8.) This guard o is preferably attached 10 to the short arm  $m^3$  of the lever m, and projects forward substantially in line with this short arm, leaving a space between the front end of the guard and the longer arm of the lever that is greater in width than the thickness 15 of the cartridge, so that this guard does not interfere with the feeding of the cartridge into the receiver and upon the levers. This peculiar relation of the guard and lever is shown in Figs. 4 and 5, where the guard is shown in 20 dotted outline, and when the cartridge is lifted by the upward motion of the feeding levers m and n the end o' of this guard overlies the upper edge of the cartridge and prevents it from being thrown upward against the bottom of 25 the switch, and otherwise steadies it in its position upon the lever ends. If at any time before the cartridge is pushed forward into the gun it is necessary to return the feedinglevers to their lower position without loading 30 the gun, this guard pulls down the cartridge as the lever ends descend.

The magazine D is secured to the left side of the receiver-chamber with its bottom opposite the opening d' in the wall of the receiver-cham-35 ber, through which cartridges pass sidewise from the magazine into the receiver. magazine has preferably a telescoping extension, d2, that may be raised at will to increase the capacity of the magazine. In its closed 40 position, however, the magazine will hold at least six cartridges, while one lies on the levers within the receivers and another is in the breech chamber of the gun. The bottom of the magazine has a peculiar recess, d3, present-45 ing an angular sloping edge, d', and this recess is located at the bottom of the bullet end or front of the magazine. When cartridges are fed into the magazine, there would be a liability, owing to the weight of the bullet, of 50 the cartridges falling and lodging diagonally in the magazine; but when the bullet end falls first, and into this recess, (see Fig. 15,) it is retained there until it is overbalanced by the weight of the remainder of the cartridge back 55 of the angular edge  $d^4$  of the magazine, and the result is that the cartridge will strike squarely on the bottom of it and roll into the

In order to further aid in holding the carto tridge in proper position as it passes through
the magazine and into the receiver, guards d<sup>5</sup>
(see Figs. 13, 15, and 16) are provided, and the
flange on the head of the cartridge lies and
moves on the back edge of these guides.

Within the receiver the guides d<sup>6</sup>, that consist
of a narrow strip of metal secured along the
inner walls of the receiver near the back wall,

receiver

and substantially parallel to it, are provided to prevent the forward movement of the cartridge within the receiver until after it has 70 passed the upper end, ds, (see Fig. 5,) of this guide. When the cartridge receiving levers are down, as shown in Fig. 9, the cartridge rolls freely from the magazine through the opening d'onto the levers; but when the levers are lifted they lie across this opening, as shown in Fig. 17, and effectually prevent any cartridge from feeding into the receiver until the levers are again in proper position to receive the cartridge on their upper side.

Attention is called and reference made to my allowed application for a patent on firearms, filed April 12, 1886, Serial No. 198,535, for a detailed description of a magazine having positive-feed levers that are operated by a 85 breech-block of the bolt type; and certain features common to the present case and my said prior one are not described at length nor herein claimed, as they are covered in the said application.

In my improved gun, as within described, the hammer is located within the stock just back of the receiver; but I contemplate the use of a hammer consisting of a sliding plunger located within the body of the stock, with a knob on the end projecting from the rear of the switch, to give control of the hammer, which, however, as in the present case, will be cocked by the slide in its backward movement.

I claim as my invention—

1. In a magazine gun, a magazine having an opening for the passage of a cartridge sidewise through its side wall near the bottom, and with a bottom having a crosswise angular ridge, d', forward of the center of gravity of the cartridge and inclined toward said passage, all substantially as described.

sage, all substantially as described.

2. In a breech-loading gun, the combination of a slide having a cam groove, the breech-operating lever with a pin engaging in the groove, a breech-block-engaging arm, and a reciprocating breech-block having a lever-receiving socket with walls adapted to be engaged by the lever-arm to raise and depress the breech-block, all substantially as described.

3. In a breech-loading fire arm, a receiver having inclined guideways for the breech-block, a reciprocating breech-block having an inclined rear wall abutting against the inclined guideways in the receiver, the breech-block lever with one arm engaging the camsurfaces on the reciprocating slide and the other arm engaging the breech-block, and the reciprocating slide bearing the lever-engaging 125 cams, all substantially as described.

4. In a breech-loading fire-arm, in combination, the reciprocating breech-block actuated by one arm of the lever, the other arm of which is controlled by inclined surfaces carried by the longitudinally moving bar or slide, a section of the firing-pin hinged to the block and swung backward by the arm of the lever, and the starter with a notched arm engaging

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the flange of the cartridge and the other arm engaging the cam on the breech block lever,

all substantially as described.

5. In a breech-loading fire arm, in combination, a reciprocating breech-block actuated by one arm of a lever, the other arm of which is controlled by inclined surfaces carried by the slide, the reciprocating slide bearing inclined surfaces, the switch hinged within the receiver at its rear end, and with a spring depressed front end that conforms to the vertical movements of the breech-block, all substantially as described.

6. In a breech-loading fire arm, in combination, a reciprocating breech-block bearing a section of the firing-pin, the vibrating switch pivoted within the receiver chamber, and the eartridge feed levers pivotally connected to the breech-block and to the receiver, all sub-

20 stantially as described.

7. In a magazine fire-arm, in combination with the reciprocating breech-block actuated by one arm of a lever, the other arm of which is controlled by inclined surfaces on a reciprocating slide, a vibrating switch, and the sectional firing-pin with one section borne in the breech-block and the other on the switch, and the within-described cartridge-feed levers m n pivotally connected to the breech-block and receiver, respectively, all substantially as described.

8. In combination, in a magazine gun, the sliding breech-block, and the levers located within the receiver and pivotally connected the 35 one to the receiver and the other to the sliding breech-block, and having a locking device for retaining the levers at the upper limit of their play against the downward pressure on the free end of the lever supporting the cartridge,

40 all substantially as described.

In a magazine-gun, in combination with the receiver, the magazine lying along the side thereof, the cartridge-receiving opening through the division-wall between these parts,
 the reciprocating breech-block, the cartridge-feed levers pivotally connected to the breech-block and to the receiver, one of said levers having astop that limits the inward movement of the nose of the cartridge, all substantially
 as described.

10. In a magazine gun, in combination with the lever-actuating mechanism, substantially as within described, the cartridge feed levers pivoted within the receiver or a continuation 55 thereof, crossing each other, and having engaging parts that form the locking device that holds the levers at the upper limit of their play until the return movement of the breechclosing device has begun, all substantially as 60 described.

11. In a breech-loading gun, in combination, the reciprocating slide bearing an extractor-finger and the vibrating switch having an abutment on its upper surface that limits the

backward movement of the shell and on its 65 under side a cam surface lying in the path of the slide or a part borne by it, and the slide with its cam engaging part, all substantially as described.

12. In a magazine gun, in combination with 70 the receiver thereof, the levers m and n and their within described operating mechanism, the said levers being pivotally connected, respectively, to the breech-block and to the receiver and holding the cartridge upon their 75 crossed edge, and a guard attached to one of said levers and extending along it, and having an end adapted to overlie the cartridge borne on said levers, all substantially as described.

13. In a magazine-gun, in combination with 80 the reciprocating breech-block H and the cartridge-feed lever m, pivotally connected to said breech-block and within the receiver of the gun, a guard, o, attached to the lever m, overlying the lever at a distance above it that will 85 permit a cartridge to roll into the receiver and upon the lever when the latter is in its lowermost position, and having a bent end, o', that overlies a cartridge while the latter is resting upon the lever m, all substantially as described.

14. In a magazine gun, in combination with the feed-lever m and its operating mechanism, the guide o, attached to said lever and lying between the side of a cartridge borne on said 95 lever and the side wall of the receiving-chamber, and the recess  $o^2$ , cut in the opposite wall of the receiver to give space for the flanged head of the cartridge to slip past the guard o, all substantially as described, and for the purpose set forth.

15. In a breech-loading gun, in combination with the receiver having inclined guideways for the breech-block, the breech-block H, with a vertical front wall, h', and an inclined rear 105 wall,  $h^2$ , abutting against the guideways in the receiver, said breech-block having also the socket h, with upper and lower walls,  $h^3$  and  $h^4$ , the breech-operating lever G, with pin g, adapted to engage the inclined surfaces, borne 110 on a reciprocating slide, said lever having the pivot g', and the lever arm  $g^2$ , to engage the breech-block, all substantially as described.

16. In a breech-loading fire-arm, in combination with the reciprocating slide E, having cam-surfaces, the operating-lever G, with the arm  $g^2$ , having a cam-surface,  $g^3$ , lying against the longer arm of the starter l, with its engaged end lying within the chamber of the gun and its longer end in contact with the cam-surface con the lever-arm, and the extractor-fingers  $l^3$ , borne on the reciprocating slide E, all substantially as described.

GEORGE V. FOSBERY.

Witnesses:

CHAS. L. BURDETT, ARTHUR B. JENKINS.