

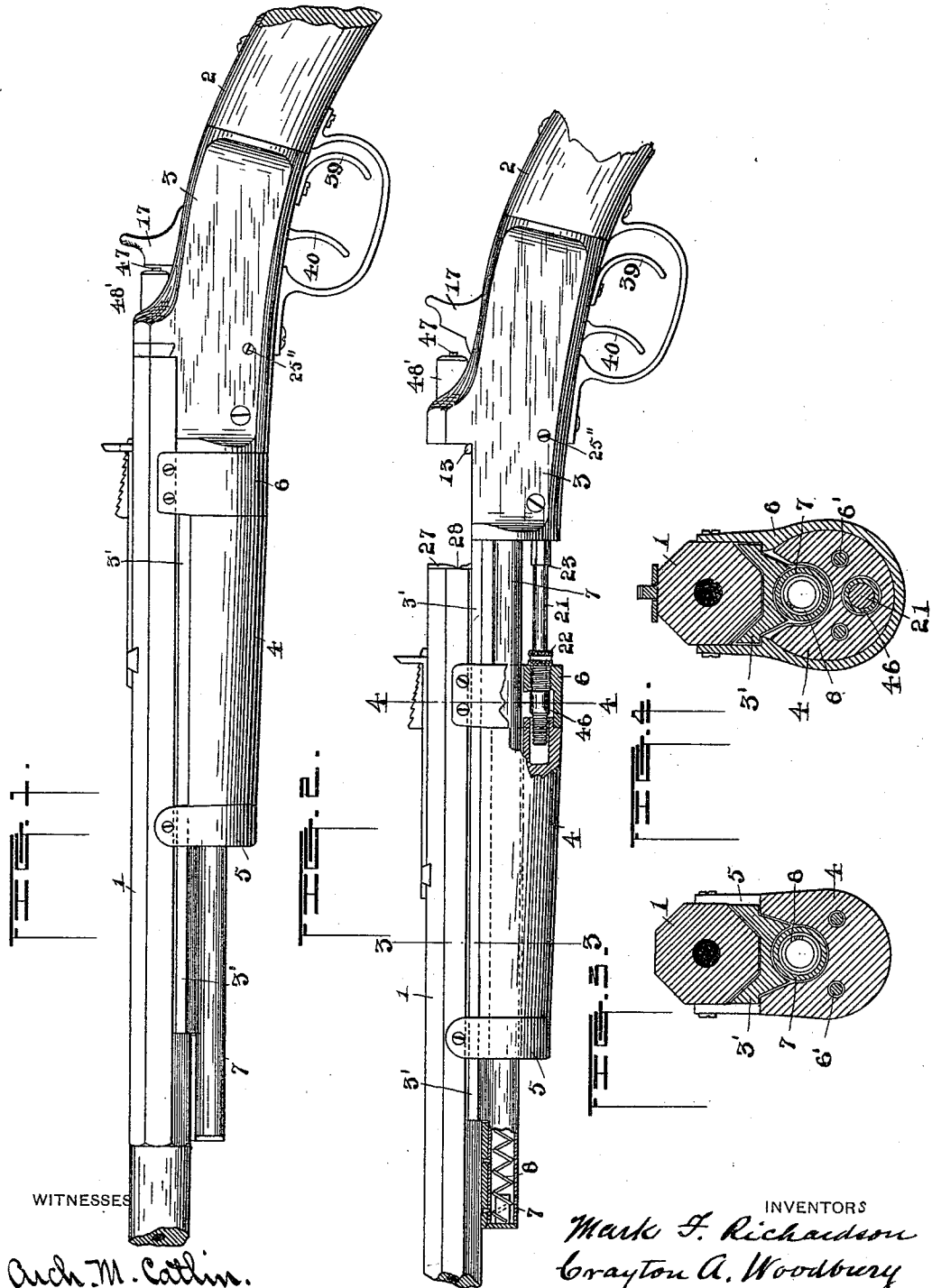
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3 Sheets—Sheet 1.

M. F. RICHARDSON & C. A. WOODBURY.
MAGAZINE GUN.

No. 496,231.

Patented Apr. 25, 1893.



WITNESSES

Arch. M. Collins.
O. N. Kean.

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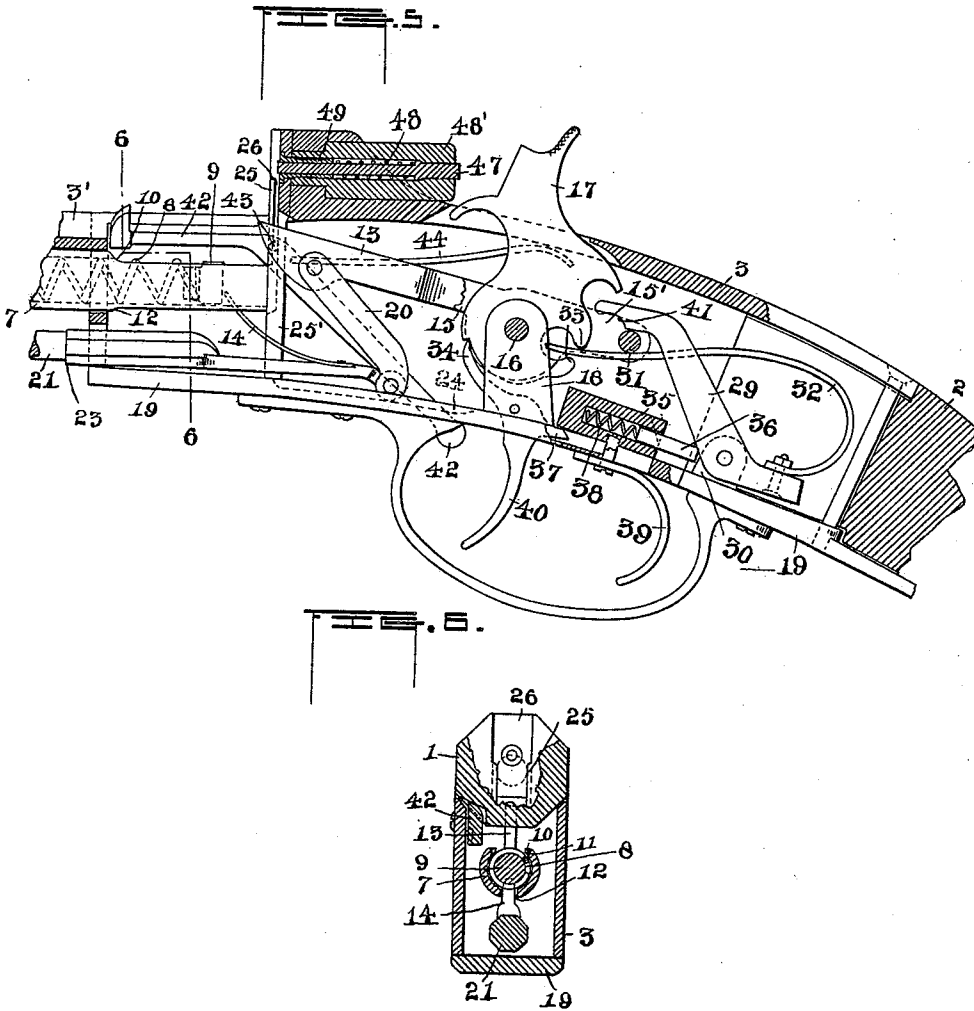
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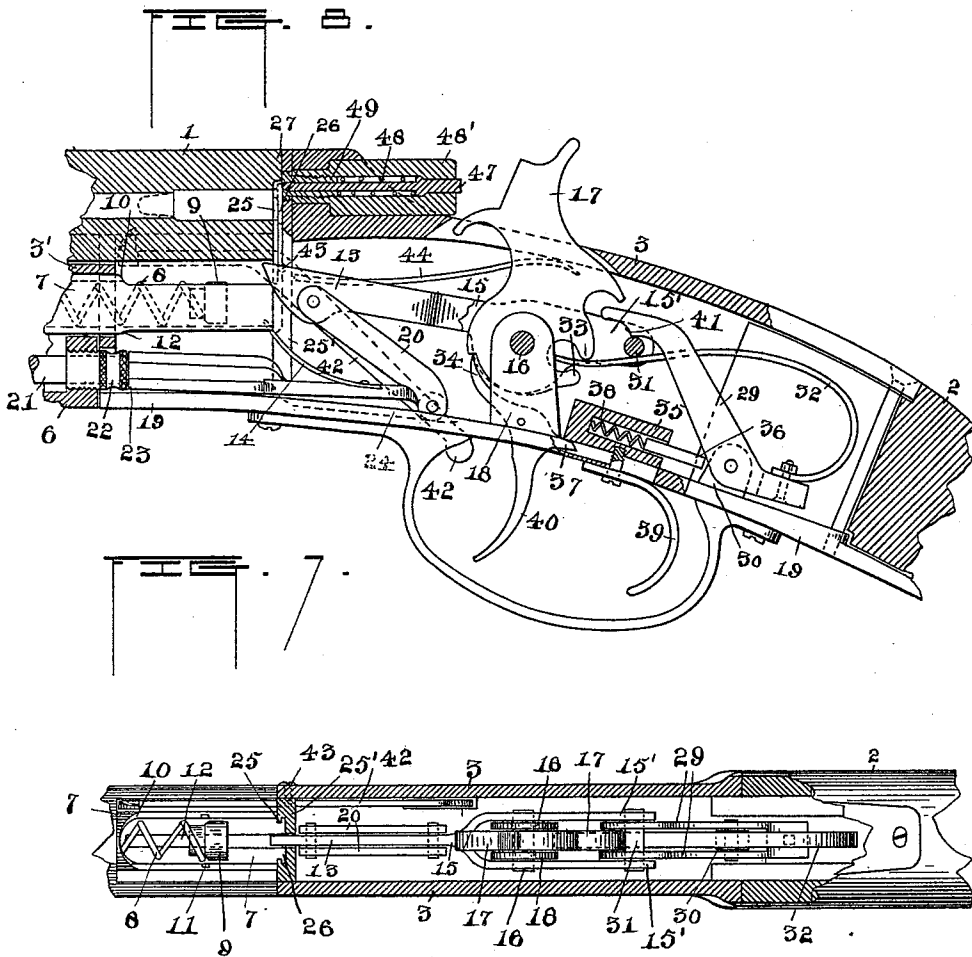
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UNITED STATES PATENT OFFICE.

MARK F. RICHARDSON AND CRAYTON A. WOODBURY, OF RUTLAND,
VERMONT.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 496,231, dated April 25, 1893.

Application filed April 1, 1892. Serial No. 427,333. (No model.)

To all whom it may concern:

Be it known that we, MARK F. RICHARDSON and CRAYTON A. WOODBURY, residents of Rutland, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Magazine-Guns; and we 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 pertains to make and use the same.

The invention relates to magazine guns, and has for its object to simplify their construction as far as consistent with due regard to increased efficiency; and the invention consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings: Figure 1 is a side elevation. Fig. 2 is a similar view showing the gun in open position. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is a section on line 4—4 of Fig. 2. Fig. 5 is a side elevation, partly in section of interior mechanism, a side wall of the receiver being removed. Fig. 6 is a section on line 6—6 of Fig. 5. Fig. 7 is a partial plan the upper part of the receiver being cut away; and Fig. 8 is a longitudinal section similar to that shown in Fig. 5, the parts being represented in the position occupied immediately before firing and the barrel indicated. Figs. 1 and 2 are drawn to a scale of one half size; and Figs. 3, 4, 5, 6, 7 and 8 are of full size.

Numeral 1 denotes a barrel, 2 the stock and 3 the receiver.

4 is a handle secured to the barrel by caps or straps 5 and 6 by which it may be slid back and forth in a bed or way formed in the extension 3' of the receiver. Said caps are fastened to the handle by bolts 6'.

7 denotes a magazine fixed to the receiver and embraced by said handle and its attaching caps 5 and 6. Within the magazine is a spring 8 to which is made fast a plug or piston 9. The magazine is cut away on its upper surface at 10. Notches 11 may be provided as shown to permit the passage therethrough of the cartridge rim. Cartridges are inserted by pushing their points in behind plug 9, and compressing the spring, each cartridge inserted being pushed out of the way to admit another until the magazine is filled.

Below the opening 10 in the bottom of the magazine is a slot 12 through which the forward end of a cartridge-raising and shell-ejecting finger 13 is moved.

14 indicates a spring finger extending upwardly through said slot and adapted to bear on plug 9, or on a cartridge when the magazine is charged.

The cartridge-raising or loading finger 13 is a part of a yoke 15 which has two arms 15' supported to turn about the pivot 16 of the hammer 17 supported in posts 18, on the detachable guard or trigger plate 19. The yoke 15 having the loading finger 13 is connected by a loose link or lever 20 to a bar or rod 21, adapted to slide back and forth in a suitable slot in the receiver. The forward end of said rod 21 enters an opening in the handle and cap and moves freely therein and also through a milled nut 22 having screw threaded connection with said cap 6. The said nut being screwed into and carried by the handle, can be moved against the shoulder 23 formed on rod 21 and made to push said rod backwardly until the movement is stopped by the closing of the gun. When the rod is thus pushed back, it carries back also the foot of the lever 20 which is guided by a slot 24 in the guard plate, with the effect to pull down the loading finger 13 on the yoke. In a reverse movement said lever is made to thrust the finger and yoke upwardly, by which the shell is pushed up in line with the bore of the barrel and the previously exploded cartridge ejected, being pushed out by the fresh cartridge. In this operation the rim of the cartridge is held laterally and guided by the flanges 25 one on each side of the channel 26, formed in the bridge or stationary breech block 25' secured in the receiver by screws, one of which is indicated by 25'', which enters the abutments of the bridge or breech block after passing through the wall of the receiver.

27 are projections on the end of the barrel adapted to be entered in said channel when the gun is closed. These are cut away at 28 to receive the cartridge rim.

29 is a lever having a pivot or fulcrum in posts 30 one arm consisting of two parallel parts or members extends up over a cross bar or pin 31, which pin connects the two arms of

the yoke 15. To the upper side of its opposite arm is secured the spring 32, which extends forward between the two parts of the lever situated on the opposite side of its fulcrum and under cross bar 31 of the yoke into a recess in the hammer and between the two lips 33.

When the gun is cocked as shown in Fig. 8 the free end of lever 29 bears upon cross pin 31, and the free end of the spring 32 bears against the upper lip 33 of the recess in the cock. The front end 13 of the yoke 15 is held down by the rod and lever 20 and cross bar 31 in the opposite end of said yoke bears up against said lever 29. The latter is held down by the spring whose other or free end bears against the upper lip 33. Said end of the spring tends to operate the hammer and is only restrained by the sear 34. As the pressure of the spring against the lip is forward of the fulcrum of lever 29, its resilient effect tends to lift the opposite or short arm of said lever and pull down the long arm upon said cross bar 31.

The sear is locked in operative position by the block 35 which slides on a rod 36 and rides up on an inclined rear extension 37 of the sear, being normally held in such locking position by a spring 38. The sliding block is withdrawn from the sear by means of the trigger 39, whereupon the trigger 40 can be used to withdraw the sear from the notch in the cock and allow the spring to operate the hammer. Simultaneously it elevates the rear end of the yoke and depresses its front end, the cross bar 31 at such time being held in the notches 41.

To re-load, the gun is simply opened; the rod 21 and the foot of lever 20 being thereby drawn forward with the effect to raise the finger 13 and push a cartridge into firing position. The first part of this movement is comparatively slow being resisted by the spring 32 which holds the notched parts of lever 29 upon the bar 31 of the yoke. As soon however as the bar escapes from the notches 41 by slipping past and below the rear shoulders of said notches the resistance of the lever 29, acted upon by the spring is suddenly diminished with the effect to cause a sudden acceleration of the upward movement of the finger, whereby the fresh cartridge is pushed into place with its rim behind flanges 25 and the exploded shell ejected. This movement cocks the gun and puts the spring under tension by the downward pressure thereon of the bar 31. The spring is also pushed down upon the lower lip 33 of the hammer with the effect to raise the latter, the sear then entering its notch in the hammer unless its rear extension has been intentionally freed from the sliding block. The sear and trigger however are so suspended that the former will fall away from and out of the path of its notch in the hammer, except when it is held by the block as stated. The gun therefore can be automatically fired by holding the sliding block off from the pro-

jection 37 of the trigger, when the gun is being closed, which act of closing through the medium of rod 21 pushes rearwardly the foot of the prop or link 20 which pulls downwardly upon the front end of yoke 15 and the spring is then free to operate the hammer, bar 31 being at such time thrown into the notches 41, and permits the spring to operate the hammer which it could not do if the sear were held in the path of the hammer by block 35.

It will be noted that the notches which receive the bar 31 when the gun is closed tend to hold it in such position but when the gun is being opened and the cartridge finger elevated the bar 31 is pressed against the side walls of the notches and a subsequent quick movement is imparted to the yoke and its finger by the passing of said bar out of the notches which accelerated movement ejects the shell by the same operation which puts a fresh cartridge in line with the bore of the barrel. In the forward movement of rod 21 the spring 14 is pushed up through the slot and in front of the rearmost cartridge between it and the next and in position to hold the forward cartridges against the pressure of the magazine spring.

42 indicates a barrel locking lever pivoted at 43 in one side of the bridge and adapted to engage a recess in the barrel when the gun is closed. It is normally held in operative position by a spring 44. Its free end is within easy reach of the finger within the trigger guard as shown whereby the barrel can be unlocked.

46 is a nut or shoulder projection on rod 21 to determine the position of the milled nut when the latter is screwed into the cap and against said nut 46. When the handle and barrel are moved to the rear from the position shown in Fig. 5 nut 22 is brought in engagement with shoulder 23 thereby pushing said rod and also the foot of lever 20 farther into the receiver which movement of said lever leaves the yoke 15 without a prop and permits the gun to be fired. In this movement the opposite or front end of the rod and its shoulder 46 are pushed into the handle. In the reverse or opening movement of the barrel and handle the latter is drawn off from the rod until the nut 22 strikes the shoulder 46 whereupon the foot of lever or prop 20 is pulled forward and the yoke tilted with the effect to lift its forward end and cock the gun as elsewhere described. But though the gun is thus cocked it cannot be fired until the described closing movement occurs. Thus the opening of the gun cocks it and also locks the firing mechanism and the latter is not released until the gun is closed. The act of closing which relieves the yoke from the locking prop 20 will automatically fire the gun if the sear-locking block 35 be simultaneously withdrawn.

47 is a firing pin surrounded by a spring 48 which retracts it. These parts are held in a removable plug 48' by a screw 49 made tubular

to permit the free passage of the firing pin when struck by the hammer.

Having described our invention, what we claim is—

5 1. The combination of the receiver provided with the forward extension, the barrel adapted to slide in said extension, the handle secured to the barrel, the rod entering said handle at one end and the receiver at its other end, and
10 provided with shoulders 23 and 46 adapted to be separately engaged by nut 22, on said handle said nut, a hammer and hammer-operating spring and mechanism connecting the rod and
15 said spring to compress the spring and cock the gun by the forward movement of the handle when the nut moves the rod by bearing upon said shoulder 46; substantially as set forth.

20 2. The combination of the receiver provided with the forward extension, the barrel adapted to slide in said extension, the handle secured to the barrel, the rod entering said handle at one end and the receiver at its other end, and
25 provided with shoulders 23 and 46 adapted to be separately engaged by nut 22 on said handle, said nut, a hammer and hammer-operating spring, a cartridge finger and mechanism connecting the rod the cartridge finger and
30 said spring to compress the spring and cock the gun by the forward movement of the handle and lift the cartridge finger when the nut moves the rod by bearing upon said shoulder
35 46; substantially as set forth.

3. The combination of the receiver provided with the forward extension, the barrel adapted to slide in said extension, the handle secured to the barrel, the rod entering said handle at one end and the receiver at its other end, and
40 provided with shoulders 23 and 46 adapted to be separately engaged by nut 22 on said handle, said nut, a hammer and hammer-operating spring, a sear, and mechanism connecting the rod and said spring to compress the spring
45 and cock the gun by the forward movement of the handle when the nut moves the rod by bearing upon said shoulder 46, and a catch acting on said sear to hold it in engagement; substantially as set forth.

4. The combination of the receiver provided with the forward extension, the barrel adapted to slide in said extension, the handle secured to the barrel, and the rod entering said handle at one end and the receiver at the other end, the handle being provided with shoulders 23
50 and 46 adapted to be separately engaged by nut 22 on said handle, said nut, the hammer and its spring for firing the gun and mechanism operative by the impact of the nut upon the shoulders respectively consisting of
55 the pivoted yoke, a loose link connecting the front end of said yoke to the rod, the lever bearing upon rear end of the yoke, and the said hammer or firing spring fast upon the rear end of said lever and operative to raise
60 the front end of the yoke, whereby the gun

may be cocked by opening it and fired by closing it; substantially as set forth.

5. The combination of the receiver provided with the forward extension, the barrel adapted to slide in said extension, the handle secured to the barrel, and the rod entering said handle at one end and the receiver at the other end, the handle being provided with shoulders 23
70 and 46 adapted to be separately engaged by nut 22 on said handle, said nut, the hammer and its spring for firing the gun, an automatically acting catch operative to hold the sear in engagement with the hammer, and mechanism operative by the impact of the nut upon the shoulders respectively consisting of
75 the pivoted yoke, a loose link connecting the front end of said yoke to the rod, the lever bearing upon the rear end of the yoke and the said hammer or firing spring fast upon the rear end of said lever and operative to
80 raise the front end of the lever and also to raise the rear end of the yoke, whereby the gun may be cocked by opening it and fired by closing it upon releasing the sear from the catch; substantially as set forth. 90

6. In a gun, a hammer, a spring for operating it, devices for raising the hammer and compressing the spring, a sear pivoted to move by gravity out of the path of the hammer and an automatically operating lock or
95 catch adapted to hold the sear in engagement with the hammer and means for withdrawing the catch from engagement with the sear, substantially as set forth, whereby the sear may be rendered operative or inoperative at
100 will.

7. The combination of the hammer, the pivoted yoke, the lever adapted to bear upon the upper side of said yoke, and the spring secured to said lever and extended under the
105 yoke and into the path of the hammer, and adapted to bear upon it either upwardly or downwardly, and mechanism for moving the yoke to compress the spring and raise the hammer, substantially as set forth, whereby
110 the gun may be cocked.

8. The combination of the hammer, the pivoted yoke, provided with a cartridge-raising finger, the lever adapted to bear upon the upper side of said yoke and the spring secured to said lever and extended under the yoke and
115 into the path of the hammer, and adapted to bear upon it either upwardly or downwardly and mechanism for moving the yoke to compress the spring and raise the hammer and a slotted magazine, the slot being arranged in the path of the finger, substantially as set forth, whereby the gun may be cocked and loaded.

9. The combination of the hammer, the pivoted yoke, the lever adapted to bear upon the upper side of said yoke, said lever having
125 notches 41 and the spring secured to said lever and extended under the yoke and into the path of the hammer and adapted to bear upon it either upwardly or downwardly and mech- 130

anism for moving the yoke to compress the spring and raise the hammer, substantially as set forth, whereby the spring is put under tension and the subsequent loading movement of the finger accelerated to eject the shell.

10. The combination of the receiver having a way formed therein for the barrel, the barrel supported in said way and arranged to slide therein, the slotted magazine open at its rear secured immediately under and parallel with the barrel, and provided with the notches situated the length of a cartridge from the rear open end of the magazine and from the stationary breech block; substantially as set forth.

11. The combination of the receiver having a way therein for the barrel, the barrel supported in said way and arranged to slide therein, the slotted magazine open at its rear secured immediately under and parallel with the barrel, and provided with the notches situated the length of a cartridge from the rear open end of the magazine and from the stationary breech block, said block being provided with flanges to hold the cartridge rim; substantially as set forth.

12. The combination of the receiver having a way formed therein for the barrel, the bar-

rel supported in said way and arranged to slide therein, the handle attached to the barrel, the slotted cartridge magazine, the rod connected with and movable by the handle, the spring secured to the rod, and adapted to be moved into the slot of the magazine and intermediate mechanism, all substantially as set forth, whereby the cartridges are held back in the magazine when the gun is opened.

13. The combination of the receiver having a way formed therein for the barrel, the barrel supported in said way and arranged to slide therein, the cocking mechanism, the rod for cocking the gun provided with a shoulder, and the milled nut secured mediately to the barrel, said nut and shoulder being adapted when the gun is being closed to move the rod and cocking mechanism and when the gun is being opened, to limit said opening movement; substantially as set forth.

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

MARK F. RICHARDSON.
CRAYTON A. WOODBURY.

Witnesses:

L. N. FRANKLIN,
J. N. KELLOGG.