G. A. HORNE.

MAGAZINE GUN.

APPLICATION FILED AUG. 10, 1914.

1,146,569.

Patented July 13, 1915.

3 SHEETS—SHEET 1.

FIG. 1.

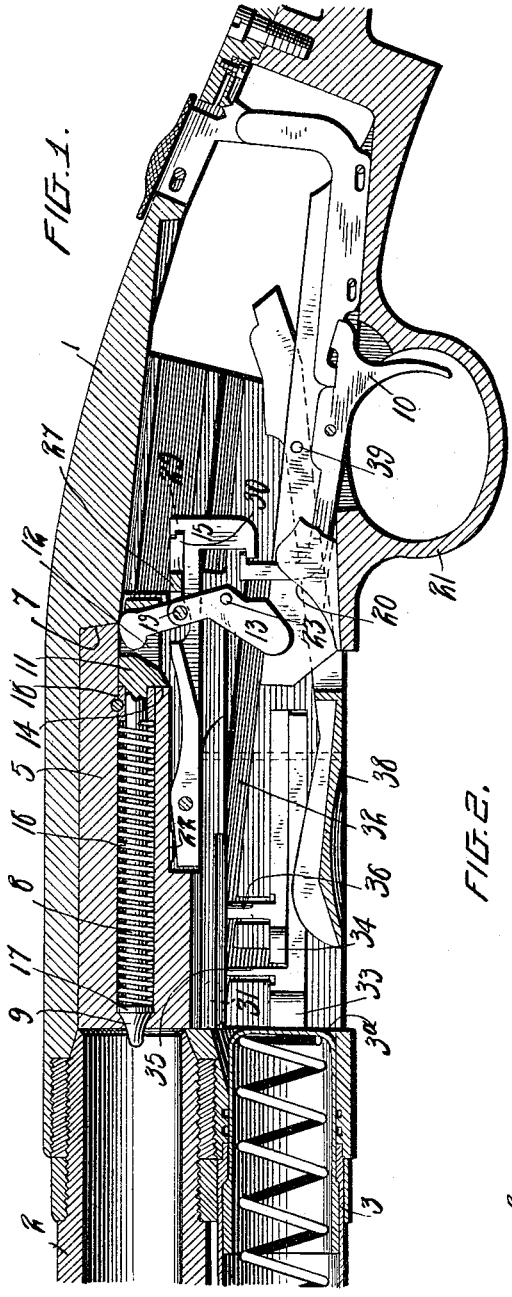
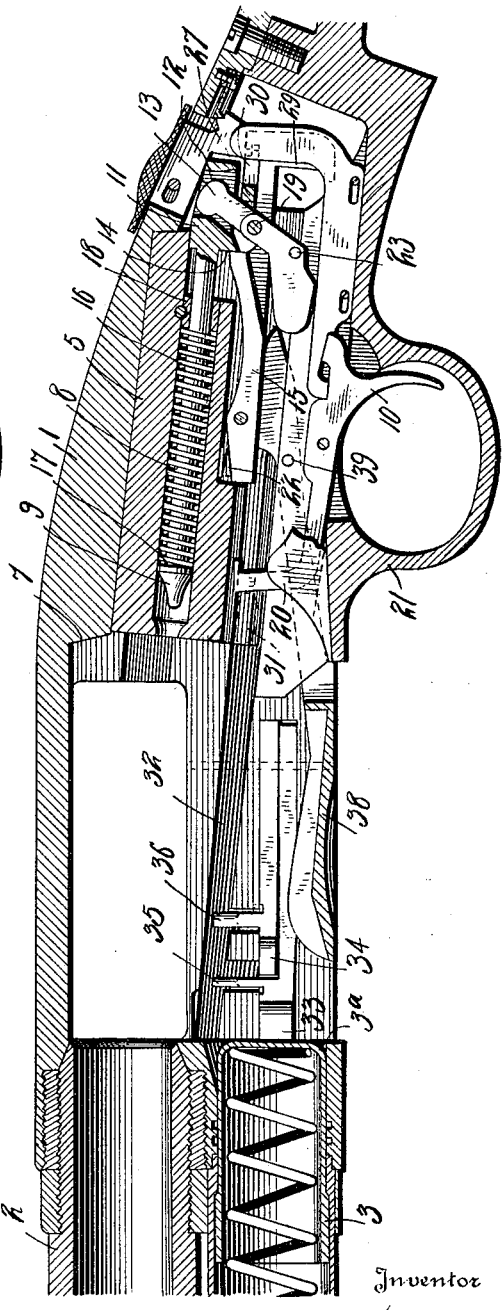


FIG. 2.



Witnesses:

Wm. F. Hoyle.

Robt. E. Barry.

Inventor

George A. Horne

By Whittaker & Prevost

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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FIG. 3.

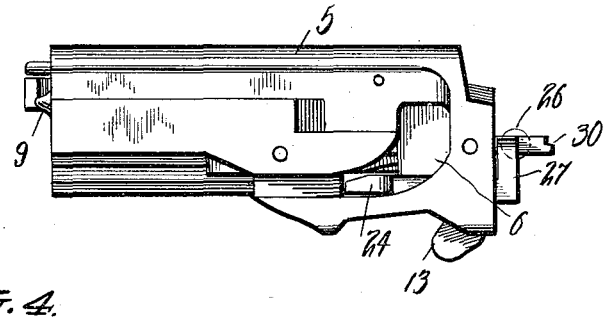


FIG. 4.

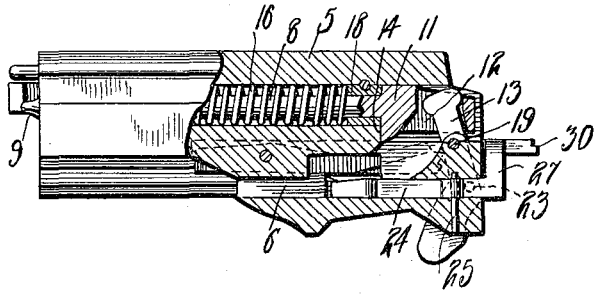


FIG. 5.

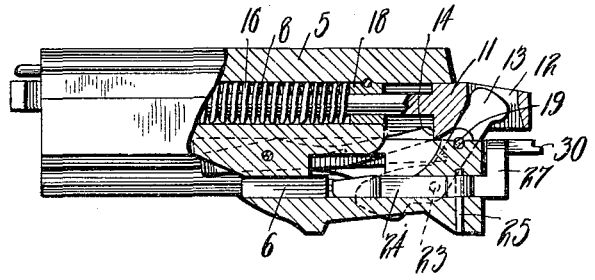
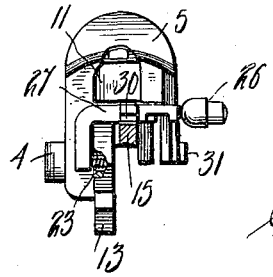


FIG. 6.



Witnesses

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3 SHEETS—SHEET 3.

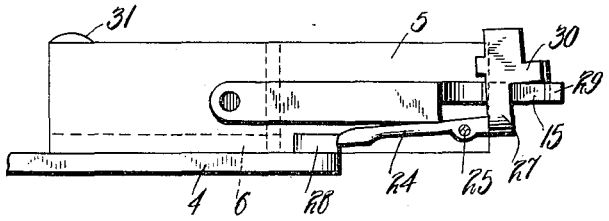

FIG. 7.

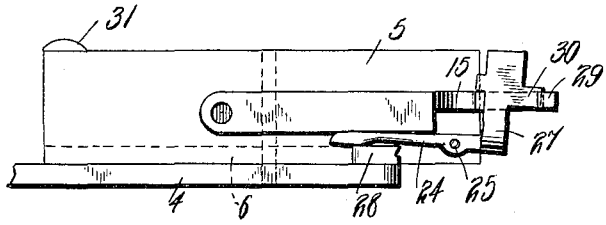

FIG. 8.

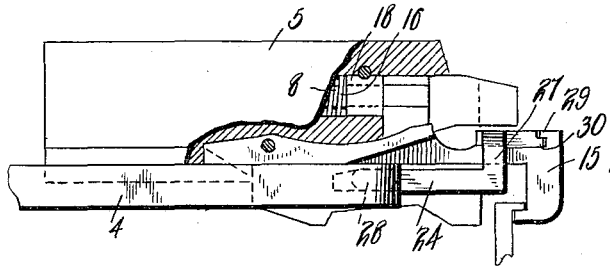

FIG. 9.

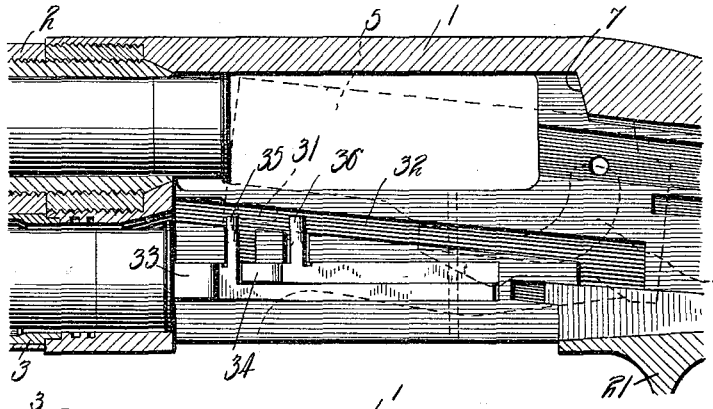

FIG. 10.

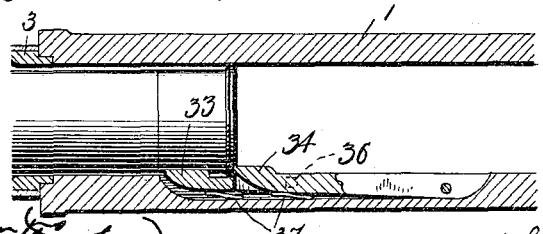

FIG. 11.

Witnesses

Wm. F. Hoyle.

Robt. S. Bassy.

Inventor

George A. Horne

By Whitaker & Prevost

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE A. HORNE, OF MERIDEN, CONNECTICUT, ASSIGNOR TO MERIDEN FIRE ARMS CO., OF MERIDEN, CONNECTICUT.

MAGAZINE-GUN.

1,146,569. Specification of Letters Patent. Patented July 13, 1915.

Application filed August 10, 1914. Serial No. 856,027.

To all whom it may concern:

Be it known that I, GEORGE A. HORNE, citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Magazine-Guns; 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.

My invention has for its object to provide a magazine gun which will correct certain defects found in this type of gun as heretofore constructed.

The particular objects of my invention are to improve the cartridge cut-off and the sear lock of a tubular magazine gun, such as is set forth in the U. S. patent to A. J. Savage No. 1,019,367 of March 5, 1912.

With these objects in view my invention consists in certain details of construction and combinations of parts hereinafter described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view of the loading and firing mechanism of a magazine gun constructed according to my invention, the stock and portions of the barrel and magazine being omitted for the purpose of clearness, and showing the breech closed. Fig. 2 is a similar view showing the breech open. Fig. 3 is a side elevation of the breech bolt in detached position. Figs. 4 and 5 are side elevations of the breech bolt, partly in section and partly broken away for fullness of illustration, and illustrating the relation of the cocking lever and adjunctive features to the action bar and sear lock. Fig. 6 is a rear end view of the breech bolt and of the action bar in engagement with the same. Fig. 7 is a bottom plan view of the breech bolt and showing the action bar lock securing the action bar in its forward position. Fig. 8 is a similar view showing the sear lock engaging the sear as the action bar is moved toward its forward position. Fig. 9 is a side elevation of the breech bolt and a portion of the action bar, the breech bolt being partly in section and partly broken away for clearness, and illustrating the relation of the action bar, action bar lock and sear lock. Fig. 10 is a vertical longitudinal sectional view of the breech frame and portions of the barrel and magazine and illustrating my improved cartridge cut-off. Fig. 11 is a horizontal longitudinal sectional view of a portion of the breech frame and the magazine and showing a top view partly in section of my cartridge cut-off.

In the drawings 1 represents the receiver or breech frame, which is connected to the barrel 2 and magazine 3 by any suitable means. The magazine is tubular in shape and arranged under the barrel 2 and is provided with the usual spring pressed follower 3^a by which cartridges contained in the magazine are forced rearwardly toward the receiver so that they may be successively admitted to the receiver at the proper time.

4 is an action bar of the usual type which enters the breech frame and may be reciprocated forwardly and rearwardly by means of the usual handle which ordinarily slides upon the magazine 3. This action rod 4 may be operatively connected with the receiver in any well known manner, for example, as shown in the aforesaid patent to Savage.

A breech bolt 5 is provided in the receiver and is arranged to be moved longitudinally and vertically by means of the action bar 4 which enters a recess 6 provided on one side of said bolt. The breech bolt 5 when at its forward limit of movement, as shown in Fig. 1, engages a recoil shoulder 7 formed in the upper part of the receiver. The breech bolt is provided with a longitudinal recess in which the firing pin 8 is mounted and said pin has a point 9 which is adapted to engage the primer of a shell and to explode the latter when the trigger 10 is operated. A cocking head 11 is provided on the end of the firing pin opposite to that having the point 9, and said head has a recess 12 for the reception of the upper end of a cocking lever 13. The cocking head is also provided with a shoulder 14 arranged to be engaged by the sear 15 which is pivotally mounted in said breech bolt. The firing pin 8 is surrounded by a coil spring 16, which abuts against a shoulder 17 on the forward end of the firing pin, and bears against a bushing 18 at its rear end.

The cocking lever 13 is pivoted at 19 in a recess in the rear end of the breech bolt and its lower end is adapted to be engaged by a nose 20 on the trigger guard 21, to cock

the gun when the breech bolt is unbreeched or moved rearwardly and downwardly. As the breech bolt is unbreeched and the firing pin 8 drawn rearwardly by the cocking lever 13, the sear 15 is forced into engagement with the notch 14 by means of a spring 22. Mounted in a suitable recess in the lower end of the cocking lever is a spring actuated plunger 23. When the firing pin 8 is in the retracted or cocked position and the breech bolt is locked, the action bar 4 is prevented from moving rearwardly by a horizontally swinging action bar lock 24 which extends into the recess 6 and is pivoted in the breech bolt at 25. The action bar lock 24 is held in its normal or locked position with relation to the action rod 4, by the spring pressed plunger 23. The action bar lock 24 may be thrown from normal position by pressing the button 26, which extends outwardly through an aperture to the exterior of the receiver, and the inner extremity of said button engages a rear arm 27 of the action bar lock, when the breech bolt is in its forward or locked position.

When the trigger 10 is pulled and the cocking lever is returned to its uncocked position, the spring operated plunger 23 is shifted to the opposite side of the pivot 25 and reverses its action on the action bar lock 24, thereby tending to release the lock from its engagement with the lug 28, mounted on the action bar. As the cartridge is exploded, the gun recoils but the slide handle being loose on the magazine 3 does not recoil to so great an extent as the gun proper, with the result that the lug 28 on the action bar 4 becomes disengaged from the action bar lock 24. The forward extremity of the action bar lock is moved inwardly through the action of the spring pressed plunger 23 bearing upon the action bar lock rearwardly of its pivot 25, thus leaving the parts of the mechanism in position to be operated for the ejection of the shell and introduction of a fresh cartridge to the barrel through the breech frame.

Thus far described, the various parts of the gun correspond with similar parts set forth in the before-mentioned patent to Savage.

It has been found in practice that it is essential to lock the sear during the forward movement of the action bar 4 to prevent the gun from being accidentally discharged. One of my present improvements is directed to this feature and consists in arranging upon the upper face of the rear end of the sear 15, a hook 29, which is adapted to be engaged by a latching extension 30 on the rear arm 27 of the action bar lock 24, during the final upward breeching movement of the breech bolt, to prevent the disengagement of the sear 15 from the shoulder 14, providing the trigger is held while the parts are being operated, thus preventing the discharge of the cartridge either purposely or accidentally when introduced to the barrel or until the action bar is moved to its extreme forward position and locked.

Another of my improvements consists in the cartridge cut-off or stop, which will now be described. The breech bolt 5 is provided at its forward end, as in the Savage patent, with a stud 31, disposed on the side opposite the recess 6 and adapted to support the breech bolt. This stud 31 moves in an inclined slot 32 in the side wall of the breech frame and is guided by said slot. A plurality of cartridge cut-offs 33 and 34 are pivotally mounted in a recess in the side of the breech frame beneath the forward portion of the slot 32 and these cut-offs or stops are provided with operating arms 35 and 36 respectively, which project upwardly into the slot 32 and are adapted to be actuated by the stud 31. Springs 37 are provided between the stops 33 and 34 and the wall of the breech frame for pressing said stops into the path of the cartridge column.

The operation of the cut-offs or stops is as follows: When the breech block is in its forward position the stud 31 engages the arm 35 and depresses the forward stop 33, thereby allowing the rearmost cartridge of the magazine to pass. At this time, however, the stop 34 will stand in the path of the cartridge column to prevent the cartridge from moving rearwardly onto the carrier, hereinafter described. When the breech bolt is moved rearwardly, the stud 31, traveling down the slot 32, releases the forward stop 33 and allows it to move into the path of the cartridge column to prevent the shell next to the rearmost one from coming back into the receiver until the proper time. Further movement of the breech bolt rearwardly and downwardly causes the stud to engage the arm 36 and disengage the rear stop from the rearmost shell thereby allowing the rearmost shell to come back onto the carrier. In the forward movement of the breech bolt, the stud, engaging and releasing the arm 36, has no special object or function, but as soon as the stud has left the rear stop, said stop is in position to again receive the next shell, while the continued forward movement of the stud causes the forward stop 33 to be depressed and release the cartridge it had been holding. The particular advantage in having the rear stop 34 hold the cartridges in the magazine while the gun is firing is in the fact, that in rapid firing it is necessary to have the rear end of the rearmost shell of the column quite a distance back in the receiver, so that it may be quickly engaged by the carrier for elevating the shell. In guns heretofore constructed, with two stops or cut-offs, the shells in the magazine during firing were held by the forward stop, and

in rapid firing the rearmost shell in the magazine would be forced to pass two cut-offs before it passed onto the carrier, and this combined operation would often cause the gun to clog or jam. With my improved cut-off this defect has been eliminated.

The cartridge carrier 38 is mounted on a pivot pin 39 intermediate the ends of the carrier, and arranged at the right hand side of the receiver. The carrier is operated by a part on the breech bolt in a manner similar to that of the Savage patent and the remaining parts of the gun and their operation are similar to the device set forth in the said Savage patent.

What I claim and desire to secure by Letters Patent is:—

1. In a fire arm, a receiver, a breech bolt within the receiver, a firing pin, a sear co-acting with the firing pin, an action bar arranged to move longitudinally of the gun barrel, an operating stud on said action bar and adapted to actuate the breech bolt, an action bar lock pivotally mounted in the breech bolt and arranged to engage with the action bar stud to lock the action bar against rearward movement, and a sear lock comprising means provided upon said action bar lock adapted to engage a part of said sear during the forward movement of the breech bolt.

2. In a fire arm, a receiver, a breech bolt within the receiver, a firing pin, a sear co-acting with the firing pin, an action bar arranged to move longitudinally of the gun barrel, an operating stud on said action bar and adapted to actuate the breech bolt, an action bar lock pivotally mounted in the breech bolt and arranged to engage with the action bar stud to lock the action bar against rearward movement, and a sear lock comprising an extension on said action bar lock adapted to engage a part of said sear during the forward movement of the breech bolt.

3. In a fire arm, a receiver, a breech bolt within the receiver, a firing pin, a sear co-acting with the firing pin and provided on its upper face with a hook shaped part, an action bar arranged to move longitudinally of the gun barrel, an operating stud on said action bar and adapted to actuate the breech bolt, an action bar lock pivotally mounted in the breech bolt and arranged to engage with the action bar stud to lock the action bar against rearward movement, and a sear lock comprising an extension on said action bar lock adapted to engage the hook part of the sear during the forward movement of the breech bolt.

In testimony whereof I affix my signature, in the presence of two witnesses.

GEORGE A. HORNE.

Witnesses:
H. D. LYMAN,
J. K. WILLIAMS.