

CLASS 42 SUBCLASS 70  
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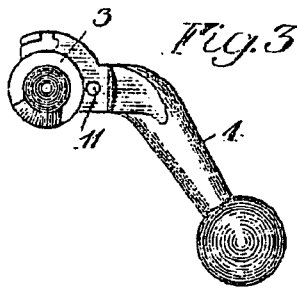
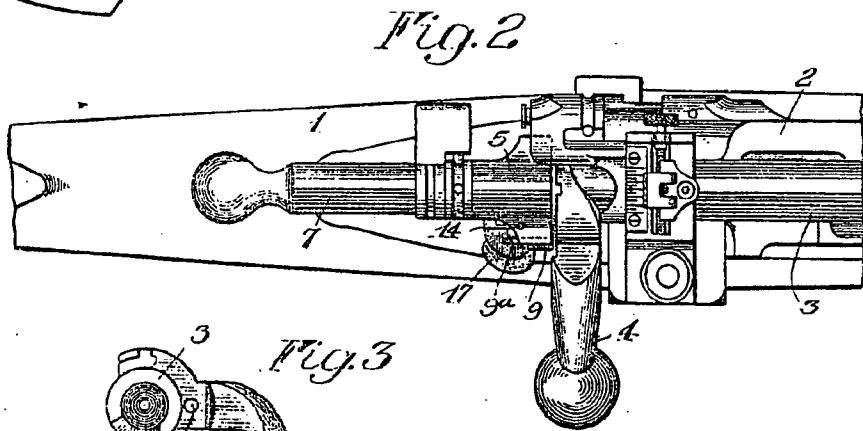
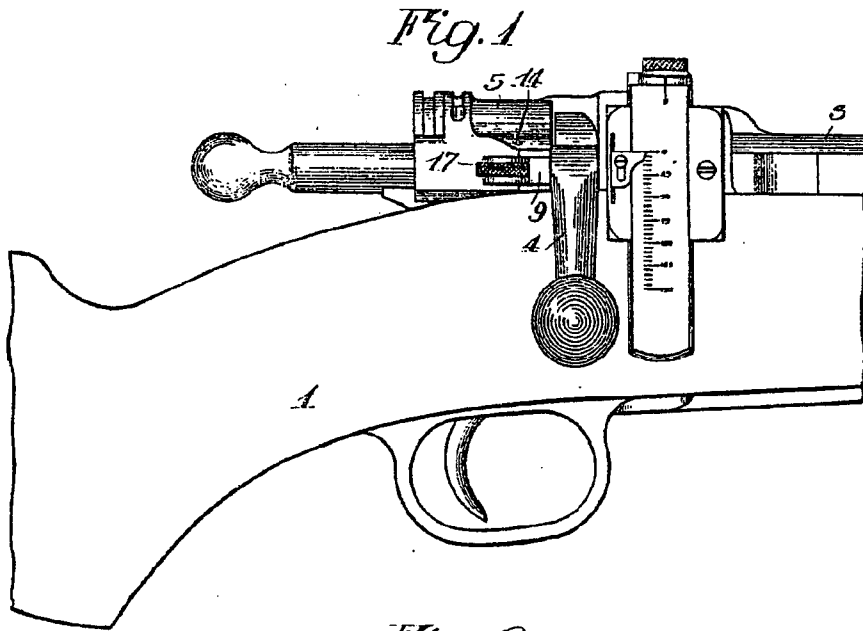
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G. A. BADER.  
 GUN.

APPLICATION FILED MAY 23, 1919.

1,322,514.

Patented Nov. 25, 1919.  
 2 SHEETS—SHEET 1.



INVENTOR  
*Gustav A. Bader*  
 BY  
*James T. Quinn*  
 ATTORNEY

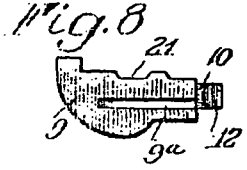
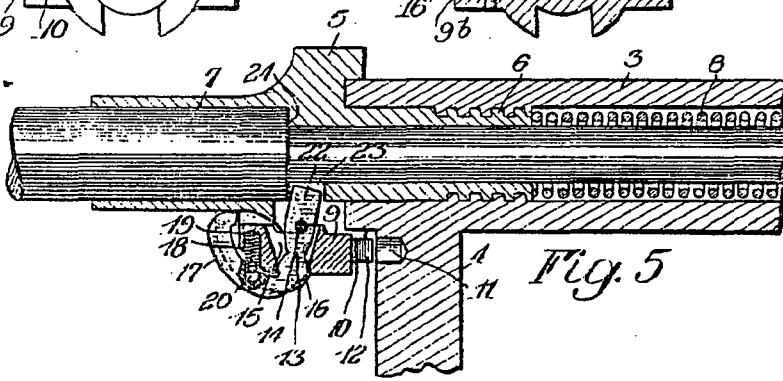
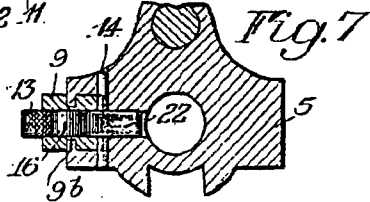
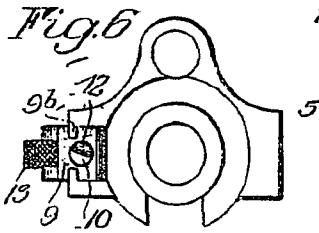
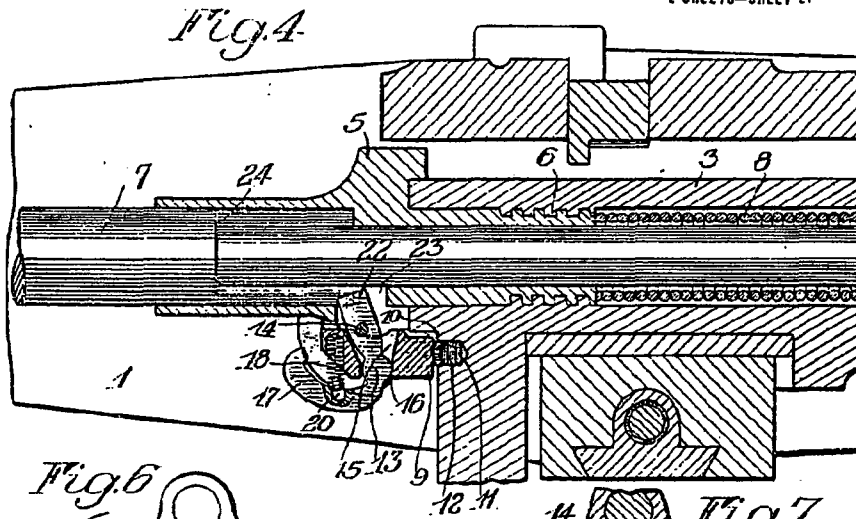
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2 SHEETS—SHEET 2.



INVENTOR  
G. A. Bader  
BY  
Davis & Thomas  
ATTORNEY

## UNITED STATES PATENT OFFICE.

GUSTAV A. BADER, OF ROCHESTER, NEW YORK.

GUN.

1,322,514.

Specification of Letters Patent.

Patented Nov. 25, 1919.

Application filed May 23, 1919. Serial No. 299,103.

*To all whom it may concern:*

Be it known that I, GUSTAV A. BADER, a citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Guns, of which the following is a specification.

The present invention relates more particularly to the type of guns in which a reciprocatory bolt mechanism carries a spring pressed firing pin and is provided with a portion which rotates to lock the bolt mechanism in firing position, an object of this invention being to lock the rotary part of the bolt mechanism against movement while in firing position and preferably to control such locking means automatically through the firing of the gun.

To this and other ends, the invention consists of certain parts and combinations of parts all of which will be hereinafter described, the novel features being pointed out in the appended claims.

In the drawings:

25 Figure 1 is a fragmentary side view of a gun equipped with the present invention;

Fig. 2 is a fragmentary top view of said gun;

Fig. 3 is a rear view of the breech bolt;

30 Fig. 4 is a horizontal sectional view through a portion of the gun in the plane of the axis of the firing pin showing the locking device locking the breech bolt in closed position;

35 Fig. 5 is a detail sectional view of the firing pin engaging the locking device and holding said locking device out of connection with the breech bolt;

40 Fig. 6 is a detail view of the sleeve which connects with the rear end of the breech bolt;

45 Fig. 7 is a vertical transverse section through said sleeve showing the manner in which the locking device is mounted on the sleeve; and

Fig. 8 is a detail view of one member of the locking device.

The invention herein is illustrated in the U. S. magazine rifle, model of 1903, which is described in publication #1923 of the Ordnance Department U. S. A., revised February 14, 1908, entitled "Description and Rules for the Management of the U. S. Magazine Rifle, Model of 1903, Caliber .30," and reference may be had to this publication for

any parts of the rifle which are not herein shown as it is unnecessary to illustrate in detail such a rifle in view of the fact that the invention is confined to an addition to the same. It will be understood however, that the invention is not limited to a rifle such as shown in the above mentioned publication but may be embodied in any construction where similar results are desired.

In rifles of the type mentioned, unless the bolt handle is turned fully down, the cam on the cocking piece will strike the cocking cam on the bolt and the energy of the main spring will be expended in closing the bolt, instead of on the primer; this prevents the possibility of a cartridge being fired until the bolt is fully closed, (see page 30 of the publication above referred to). In most instances, the bolt handle is turned fully down but is afterward unintentionally and unknowingly shifted slightly in an upward direction so that when the trigger is pulled the firing does not take place. It will be readily understood that this is not only a disadvantage to an army in battle but it is also a disadvantage to a hunter who, after roaming many hours, and may be days, meets game only to lose it through misfire due to the upward shifting of the bolt handle of which he had no knowledge. According to this invention the turning of the rotary part of the bolt mechanism is prevented by a locking device which automatically enters into locking position to lock the rotary portion of the bolt mechanism, this locking device being automatically shifted out of locking position when the gun is fired.

Referring to the embodiment of the invention herein shown, 1 indicates the stock of the gun and 2 the receiver on which the bolt mechanism is reciprocable. This mechanism comprises in this instance a breech block 3 reciprocable and rotatable in the well of the receiver and interlocking with the receiver by a rotary movement under the action of the handle 4, a sleeve 5 being guided on the receiver to be held against turning with the bolt and having a screw threaded connection 6 with the bolt. Carried by the sleeve and the breech bolt is a firing pin 7 which is acted upon by a main spring 8 of helical formation surrounding the firing pin. The foregoing parts are the known parts of the U. S. magazine rifle above mentioned.

As before pointed out, the handle 4 on the breech bolt 3 is shifted accidentally at times away from its lowered position where it locks the breech bolt to the receiver, thus causing the energy of the main spring of the firing pin to be used up in closing the bolt instead of acting on the primer with full force. According to the illustrated embodiment of this invention, means is provided for locking the breech bolt in its innermost position interlocked with the receiver. This means in this instance comprises a detent 9 preferably slidably mounted on the sleeve 5 at one side of the latter by forming grooves 9<sup>a</sup> in the upper and lower surfaces of the detent and projecting ribs 9<sup>b</sup> on the sleeve to fit into said grooves 9<sup>a</sup>. This detent may have a nose 10 adapted to enter a recess or notch 11 formed in the rear face of the bolt arm 4, the uppermost face of the nose 10 being beveled at 12 so that when the bolt arm 4 is swung to its lowermost position, it will cooperate with the cam face 12 and move the latter rearwardly, after which the detent 9 will move under the action of a spring to be described, so that the nose 10 enters into the notch 11 and locks the bolt arm 4 in its lowermost position so that the bolt is held interlocked with the receiver.

The detent 9 may be controlled either manually or automatically, the latter being accomplished preferably through the firing pin 7. To these ends, a lever 13 may be pivotally mounted at 14 in the sleeve 5 and extend through an opening 15 in the detent 9, the lever having on opposite sides curved faces 16 acting as curved bearings for engaging opposite walls of the opening 15. On the outer side of the detent, the lever 13 may have a curved arm 17 and between this arm 17 and the detent, a helical spring 18 may be arranged, said spring being received within a pocket 19 in the detent 9 and a rocking projection 20 on the inner face of the arm 17. It will be apparent that this spring 18 acts on the operating lever 13 to shift the latter in a direction to move the detent 9 toward the arm 4 of the breech bolt 3. The pivot pin 14 may act as a stop for limiting the movement of the detent 9 and to this end the inner face of the detent is provided above and below the lever 13 with notches 21 in which the pivot pin 14 is received, the ends of these notches serving to limit the movement of the detent 9 on the guides of the sleeve 5. It will thus be apparent that the pin 14 not only holds the lever 13 to the sleeve 5 but also retains the detent on the sleeve 5 and therefore the removal of this pin 14 permits the removal of the two parts as well as the spring arranged between such parts.

The control of the detent 9 through the firing pin is preferably effected by providing an extension 22 on the lever 13 which

projects through an opening 23 in the sleeve into the path of the usual shoulder 24 on the firing pin. When the firing pin is in its innermost position in the sleeve 5, this shoulder 24 engages the extension 22 of the lever 13 and moves the lever 13 in a direction to carry the detent out of interlocking connection with the arm 4 of the breech bolt, as will be seen more clearly by referring to Fig. 5 of the drawings, thus permitting the breech bolt to be rotated to become unlocked from the receiver in order that the bolt, the sleeve and the firing pin may be moved rearwardly after the firing pin is cocked. The shoulder 24 moves away from the extension 22 permitting the end 22 to shift rearwardly under the action of the spring 18 and in this way to project the detent 9 forwardly so that when the arm 4 of the breech bolt is moved downwardly, it will cooperate with the beveled end 12 of the detent shifting the latter to the rear so that the nose 10 may enter into the notch 11, thus locking the arm 4 of the breech bolt in the lower position. In this position of the detent it may be moved rearwardly manually by pressing on the extension 17 of the lever 13 or it may be moved rearwardly automatically by shifting the firing pin to its innermost position in the sleeve 5, when the shoulder 24 will engage the lever extension 22 and through the lever shift the detent 9 to the rear.

From the foregoing it will be seen that there has been provided a locking device which locks the rotary part of the bolt mechanism in interlocking connection with the receiver, thus preventing the accidental shifting of the bolt mechanism to an inoperative position. This locking device is controllable either manually or automatically so as to release the bolt mechanism. The automatic control is preferably effected through the firing of the gun due preferably to the shifting of the firing pin in firing, the firing pin engaging with a lever which shifts the detent out of locking position.

What I claim as my invention and desire to secure by Letters Patent is:

1. A firearm of the type in which the breech mechanism has a sliding movement in the receiver and a portion which rotates to lock the mechanism in firing position, distinguished by a locking device which locks the rotary part against rotary movement, and is operated automatically to release the rotating part on the firing of the gun.

2. A firearm of the type having a reciprocatory bolt mechanism provided with a firing pin movable with said bolt mechanism and also relatively thereto and also with a portion rotatable to lock the bolt mechanism in firing position, distinguished by a locking device for locking the rotary portion against rotary movement, said locking

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device being controlled by the firing pin to release the rotary portion on the firing of the gun.

3. A firearm of the type having a reciprocatory bolt, a sleeve reciprocating with said breech bolt but held against rotation with the bolt, distinguished by a locking device which is carried by the sleeve, cooperates with the breech bolt to hold the latter against rotation and is operated automatically on the firing of the gun to release the breech bolt.

4. A firearm of the type having a rotary and reciprocatory breech bolt, a sleeve reciprocating with the bolt but held against rotation therewith, and a firing pin moving with the sleeve and the breech bolt and also relatively to said parts, distinguished by a

locking device for holding the breech bolt against rotation, said locking device being mounted upon the sleeve and controlled by the firing pin.

5. A firearm comprising a rotary and reciprocatory breech bolt, a sleeve reciprocating with the bolt but held against rotation with said bolt, a firing pin reciprocating with the sleeve and the bolt and also movable relatively to said parts, a detent slidably mounted upon the sleeve and adapted to cooperate with the breech bolt to hold the latter against turning, and a lever mounted on the sleeve and having a manually operable portion and also a portion arranged to be operated by the firing pin.

GUSTAV A. BADER.