May 15, 1928.

1,669,496

E. R. STAHL

BOLT ACTION GUN

Filed Aug. 12, 1927

3 Sheets-Sheet 1

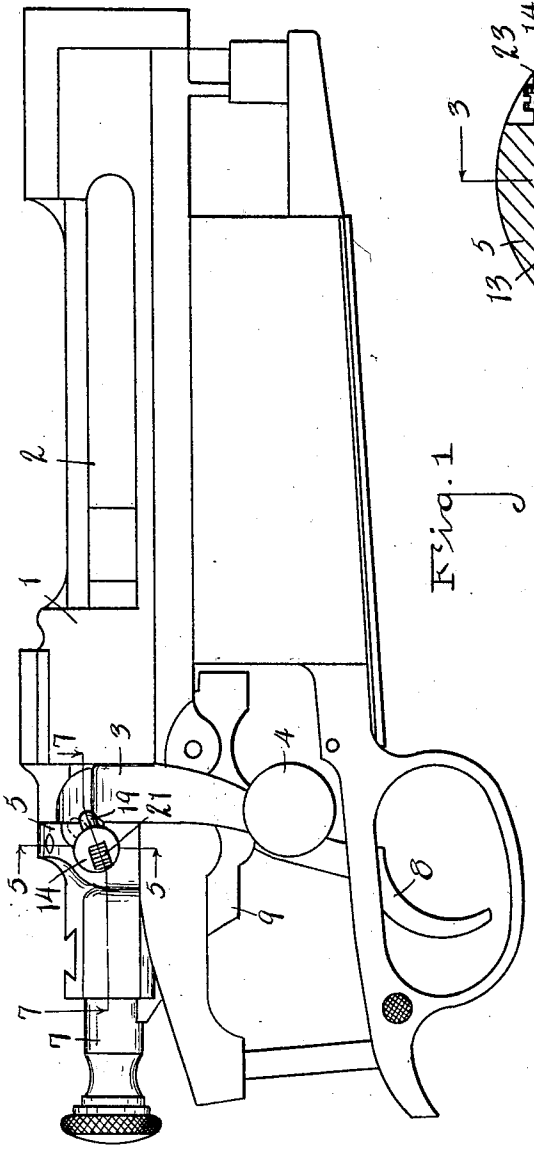


Fig. 1

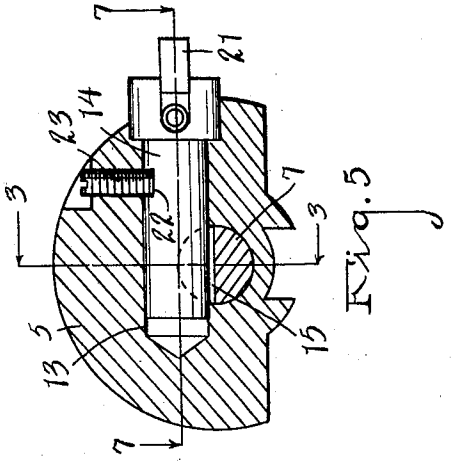


Fig. 5

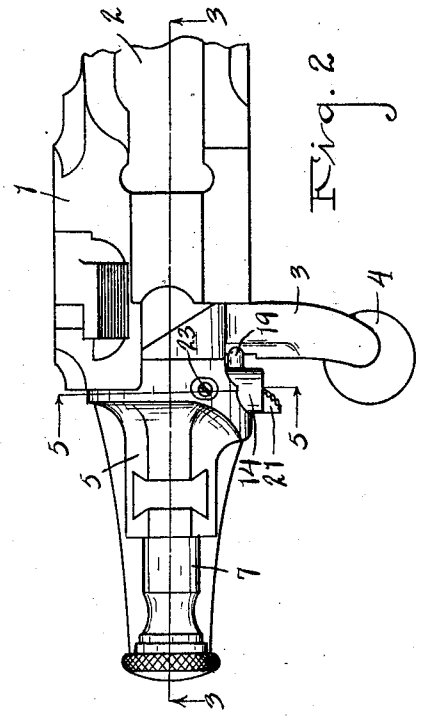


Fig. 2

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3 Sheets-Sheet 2

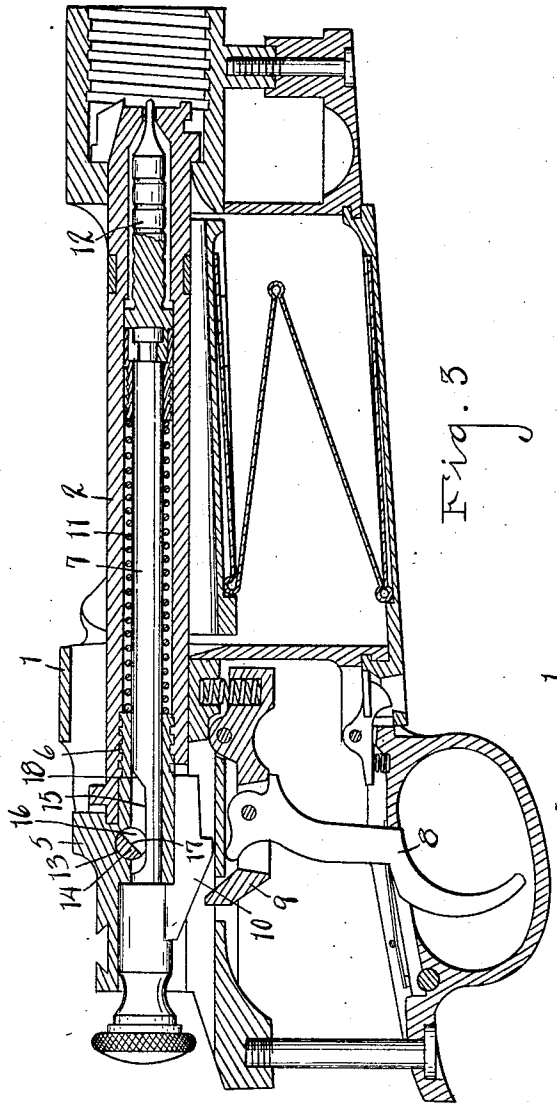


Fig. 3

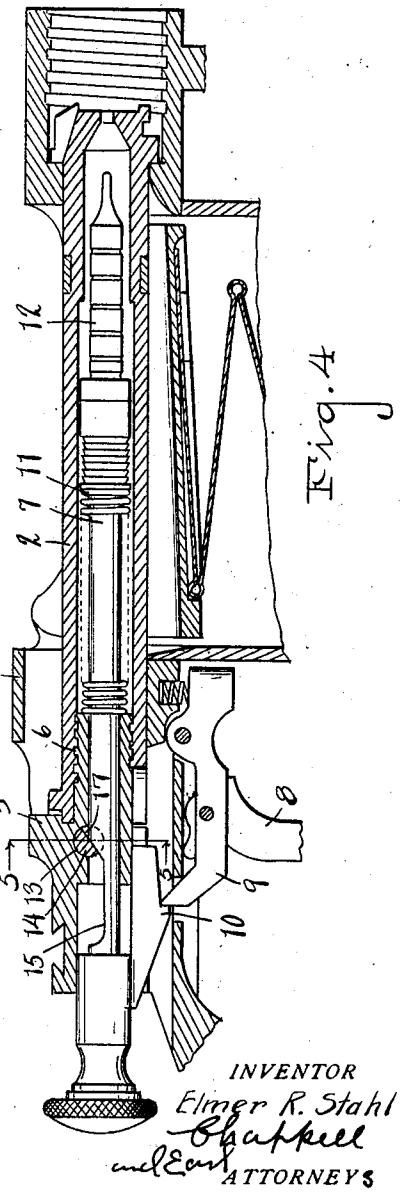


Fig. 4

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Filed Aug. 12, 1927 3 Sheets-Sheet 3

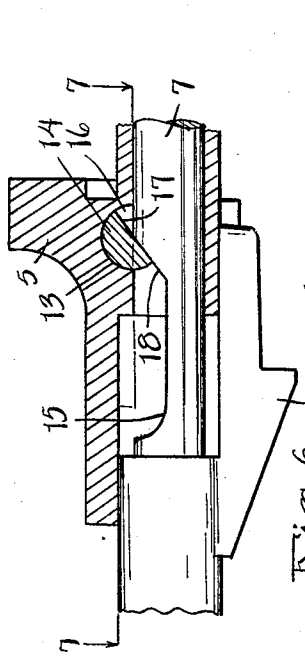


Fig. 6

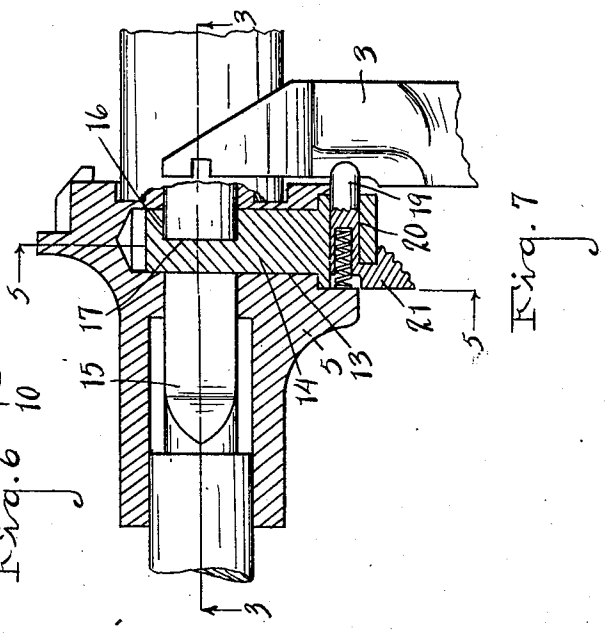


Fig. 7

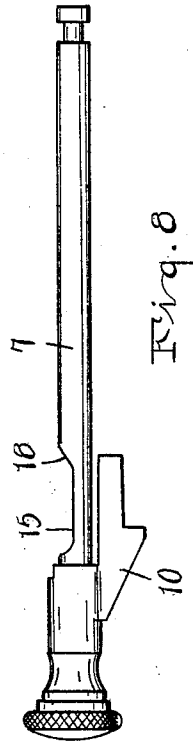


Fig. 8

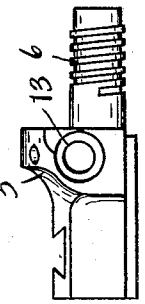


Fig. 9



Fig. 11

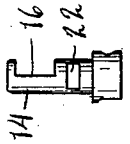


Fig. 10

INVENTOR
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Patented May 15, 1928. 1,669,496

UNITED STATES PATENT OFFICE.

ELMER R. STAHL, OF DOWAGIAC, MICHIGAN.

BOLT-ACTION GUN.

Application filed August 12, 1927. Serial No. 212,492.

The main objects of this invention are:

First, to provide a bolt locking means for bolt action guns in which the flight of the firing pin is away from and unimpeded by the locking means.

Second, to provide a breech bolt locking means which is automatic in its operation.

Third, to provide an automatic breech bolt locking means which is capable of manual release.

Fourth, to provide a breech bolt locking means in which the parts are comparatively simple and are so formed and supported that they are not likely to be injured or rendered inoperative in use by severe or careless manipulation of the gun.

Objects relating to details and economies of construction and operation of my invention will definitely appear from the detailed description to follow.

The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, forming a part of this application, in which:

Fig. 1 is a side elevation of a gun action embodying the features of my invention, the stock and barrel and magazine being omitted.

Fig. 2 is a fragmentary plan view.

Fig. 3 is a longitudinal section on a line corresponding to line 3—3 of Figs. 2, 5 and 7, certain parts being shown in full lines for convenience in illustration, the firing pin being in firing position.

Fig. 4 is a fragmentary longitudinal section corresponding to Fig. 3 with the firing pin in retracted position.

Fig. 5 is a transverse section on line 5—5 of Figs. 1, 2, 4, and 7.

Fig. 6 is an enlarged detail partially in longitudinal section showing the firing pin in retracted or set position, with the breech bolt locking bolt in locking relation thereto.

Fig. 7 is a detail view partially in longitudinal section on line 7—7 of Figs. 1, 5 and 6.

Fig. 8 is a side elevation of the firing pin with its plunger removed.

Fig. 9 is a side elevation of the non-rotating portion of the breech bolt.

Fig. 10 is a plan view of the locking bolt.

Fig. 11 is a plan view of the locking bolt detent and its spring.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawings, 1 represents the body or receiver portion of the breech bolt action. This is a standard commercial type and its structural details need not, therefore, be described.

The breech bolt 2 is mounted in the receiver for reciprocating and rotary movement as is common with gun actions of this type, the bolt being provided with a laterally projecting arm 3 having a hand piece 4 at its outer end.

The breech bolt sleeve 5 is non-rotatably supported for reciprocating movement with the barrel portion of the breech bolt, having threaded engagement therewith at 6.

The firing pin 7 is supported in the breech bolt and its sleeve for movement independently thereof. The trigger 8 is hung from the sear 9 which engages the keeper 10 of the firing pin when the firing pin is retracted or set, as shown in Fig. 4.

The firing pin is provided with an actuating spring 11 and a tappet or plunger 12.

The sleeve 5 is provided with a transverse bore 13 to receive and rotatably support the locking bolt 14, the firing pin having an elongated recess 15 to receive this bolt, the bore 13 in part intersecting the firing pin bore 15 in the sleeve 5.

The locking bolt has a segmental recess 16 which permits limited movement thereof and provides a flat face 17 coacting with the forwardly inclined shoulder 18 at the forward end of the recess 15 when the parts are in locking position, the firing pin in this position, as shown in Fig. 4, serving as a detent to support the locking bolt against rotation in releasing direction.

The locking bolt is provided with a detent 19 reciprocatingly mounted in a transverse bore 20 in the locking bolt, shown in Fig. 7, to coact with the arm 3 on the breech bolt. This detent is provided with a finger piece 21 which permits manual releasing of the detent should occasion require.

The locking bolt has a transverse kerf-like recess 22 engaged by the retaining screw 23 for holding the parts in assembled position.

With the parts thus arranged, when the

breech bolt is actuated to set the trigger, the shoulder 18 of the firing pin is brought into engagement with the locking bolt, serving as a detent to support it against rotation, the parts being then in position shown in Figs. 4, 6 and 7, the arm 3 being engaged by the detent 19 and thereby locked in its initial position so that the breech bolt cannot be accidentally removed in position to impede the flight of the firing pin.

It will be observed that while the firing pin constitutes an element of the locking means, its flight is away from the locking means so that its movement is not impeded by the locking means, its movement in fact being entirely free or independent from such locking means.

I have illustrated and described my improvements in an embodiment which is highly practical. I have not attempted to illustrate or describe other embodiments or adaptations as I believe this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a firearm, the combination of a receiver, a breech bolt mounted for reciprocating and rotary movement in said receiver and provided with a laterally projecting arm, a non-rotatable sleeve mounted to reciprocate with said bolt, a firing pin operatively associated with said breech bolt and sleeve, a locking bolt rotatably mounted in said sleeve transversely of said firing pin, said firing pin having a transverse recess to receive said locking bolt, the front end of said recess being forwardly inclined providing a locking shoulder, said locking bolt having a transverse recess to receive said firing pin, the face of said recess being engaged by the said locking shoulder of the firing pin when the firing pin is in set position, and a spring actuated reciprocating detent disposed transversely of said locking bolt to engage said breech bolt arm when it is in its initial position, said detent being provided with a finger piece permitting the releasing of said breech bolt.

2. In a firearm, the combination of a receiver, a breech bolt mounted for reciprocating and rotary movement in said receiver and provided with a laterally projecting arm, a non-rotatable sleeve mounted to reciprocate with said bolt, a firing pin operatively associated with said breech bolt and sleeve, a locking bolt rotatably mounted in said sleeve transversely of said firing pin, said firing pin having a transverse recess to receive said locking bolt, said locking bolt having a transverse recess to receive said firing pin, and a spring actuated reciprocating detent disposed transversely of said locking bolt to engage said breech bolt arm when it is in its initial position, said detent being provided with a finger piece permitting the releasing of said breech bolt.

3. In a firearm, the combination of a receiver, a breech bolt mounted for reciprocating and rotary movement in said receiver, a non-rotatable sleeve mounted to reciprocate with said bolt, a firing pin operatively associated with said breech bolt and sleeve, and means for locking said breech bolt comprising a locking bolt rotatably mounted in said sleeve transversely of said firing pin, said firing pin having a transverse recess to receive said locking bolt, the front end of said recess providing a locking shoulder, said locking bolt having a transverse recess to receive said firing pin, the face of said recess being engaged by the locking bolt of the firing pin when the firing pin is in set position.

4. In a firearm, the combination of a receiver, a breech bolt mounted for reciprocating and rotary movement in said receiver and provided with a laterally projecting arm, a non-rotatable sleeve mounted to reciprocate with said bolt, a firing pin operatively associated with said breech bolt and sleeve, and a locking bolt rotatably mounted in said sleeve transversely of said firing pin to be engaged by the firing pin when the firing pin is in set position, said locking bolt having a spring actuated detent disposed to engage said breech bolt arm when it is in its initial position, said detent being manually releasable.

5. In a firearm, the combination of a receiver, a breech bolt mounted for reciprocating and rotary movement in said receiver, a non-rotatable sleeve mounted to reciprocate with said bolt, a firing pin operatively associated with said breech bolt and sleeve, and a locking member for said breech bolt rotatably mounted in said sleeve transversely of said firing pin to be engaged by the firing pin when the firing pin is in set position.

6. A firearm comprising a rotary and reciprocatory breech bolt, a non-rotating sleeve reciprocating with the bolt, a firing pin reciprocating with the sleeve and bolt and movable relative to said parts, and means for locking said bolt in firing position comprising a locking member mounted on said sleeve to cooperate with said bolt, said firing pin cooperating with said locking member to hold the same in bolt locking position when the firing pin is in set position, the flight of the pin being away from said locking means whereby its movement is unimpeded by the locking means.

7. In a firearm, the combination of a receiver, a breech bolt mounted for reciprocating and rotary movement in said receiver, a non-rotatable sleeve mounted to reciprocate with said bolt, a firing pin operatively associated with said breech bolt and sleeve,

and a locking member for said breech bolt mounted in said sleeve to be engaged by the firing pin when the firing pin is in set position.

8. A firearm comprising a rotary and reciprocatory breech bolt, a non-rotating sleeve reciprocating with the bolt, a firing pin operatively associated with said bolt and sleeve and movable relative thereto, and means for locking said breech bolt in firing position comprising a locking member mounted on said sleeve to cooperate with said breech bolt, said firing pin cooperating, when in set position, with said locking member to hold the same in breech bolt locking position, the flight of the firing pin being away from said locking member whereby its movement is unimpeded by the locking means.

9. A firearm comprising a rotary and reciprocatory breech bolt, a non-rotating sleeve reciprocating with the bolt, a firing pin operatively associated with said bolt and sleeve and movable relative thereto, and means for locking said breech bolt in firing position comprising a locking member mounted on said sleeve to cooperate with said breech bolt, said firing pin cooperating, when in set position, with said locking member to hold the same in breech bolt locking position.

10. A firearm comprising a rotary and reciprocatory breech bolt, a firing pin operatively associated therewith, and a breech bolt locking means cooperating with said firing pin when the firing pin is in set position to lock the breech bolt, the firing stroke of said firing pin being away from said locking means.

11. A firearm comprising a rotary and reciprocatory breech bolt, a firing pin operatively associated therewith, and a breech bolt locking means, said firing pin when in set position constituting a detent for the breech bolt locking means, the firing stroke of said firing pin being away from said locking means.

12. A firearm breech bolt action comprising a breech bolt mounted for reciprocatory and rotary movement, a firing pin operatively associated with said breech bolt, and a breech bolt locking means operatively associated with said breech bolt and firing pin, the firing pin acting when set to hold said locking means in locked position, the flight of the firing pin being away from and unimpeded by said locking means.

13. A firearm breech bolt action comprising a breech bolt mounted for reciprocatory and rotary movement, a firing pin operatively associated with said breech bolt, and a breech bolt locking means operatively associated with said breech bolt and firing pin, the firing pin acting when set to hold said locking means in locked position.

14. A breech bolt firearm action consisting of a breech bolt, automatic means for locking said breech bolt in initial position after actuation to set the firing pin, and a firing pin constituting a detent for said locking means, the flight of the firing pin being free and unimpeded by said locking means.

15. A breech bolt firearm action consisting of a breech bolt, automatic means for locking said breech bolt in initial position after actuation to set the firing pin, and a firing pin constituting a detent for said locking means.

16. A firearm breech bolt action comprising a breech bolt mounted for reciprocatory and rotary movement, a firing pin operatively associated with said breech bolt, and a breech bolt locking means operatively associated with said breech bolt and firing pin, the firing pin constituting a detent for said locking means, the flight of the firing pin being free and unimpeded by said locking means.

17. A firearm breech bolt action comprising a breech bolt mounted for reciprocatory and rotary movement, a firing pin operatively associated with said breech bolt, and a breech bolt locking means operatively associated with said breech bolt and firing pin, the firing pin constituting a detent for said locking means.

In witness whereof I have hereunto set my hand.

ELMER R. STAHL.