

A. H. FOX & G. A. HORNE.  
 BREACH LOADING GUN.  
 APPLICATION FILED JULY 24, 1907.

921,220.

Patented May 11, 1909.

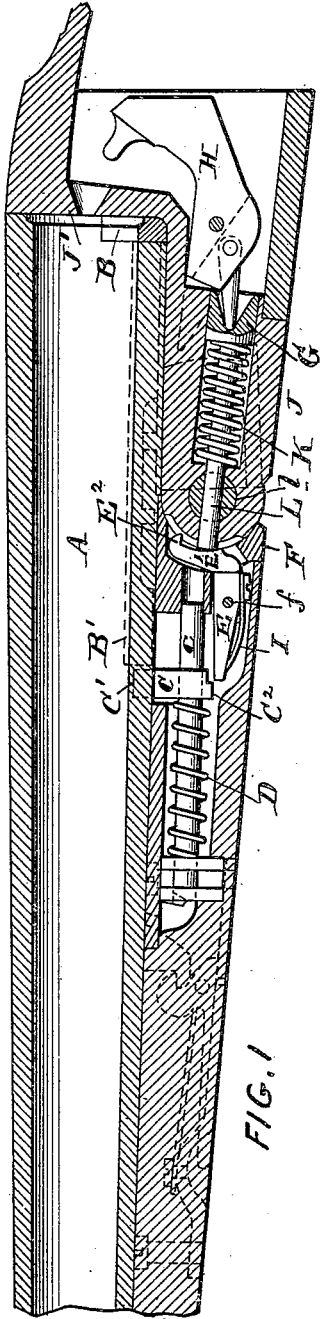


FIG. 1

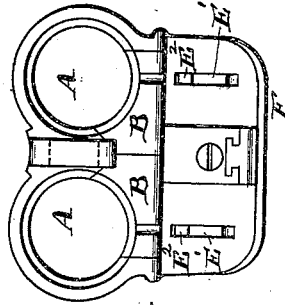


FIG. 4

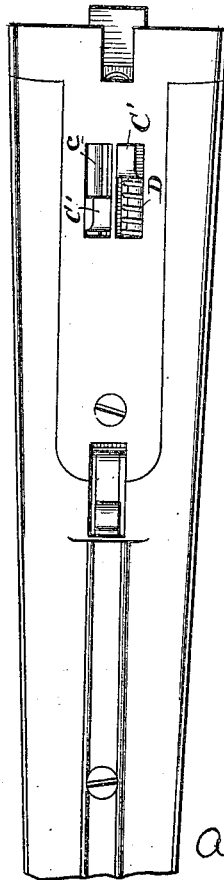


FIG. 2

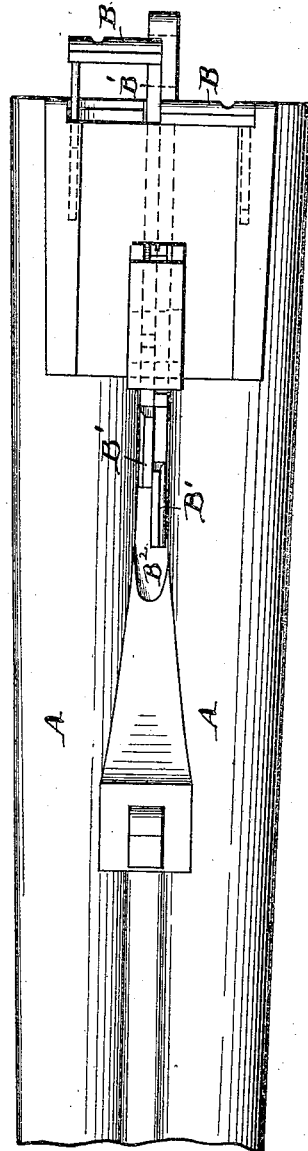


FIG. 3

Witnesses

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# UNITED STATES PATENT OFFICE.

ANSLEY H. FOX AND GEORGE A. HORNE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS,  
BY MESNE ASSIGNMENTS, TO A. H. FOX GUN COMPANY, A CORPORATION OF PENNSYLVANIA.

## BREECH-LOADING GUN.

No. 921,220.

Specification of Letters Patent.

Patented May 11, 1909.

Application filed July 24, 1907. Serial No. 385,398.

To all whom it may concern:

Be it known that we, ANSLEY H. FOX and GEORGE A. HORNE, both of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Breech-Loading Guns, of which the following is a specification.

Our invention has reference to breech-loading guns and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

Our invention relates to that class of hand fire-arms known as breech-loading break-down guns and in which the cartridge shells after being fired are automatically ejected from the gun.

The object of our invention is to provide means for ejecting the discharged shells automatically in such a manner that when the hammers are set for firing the breaking-down of the gun will cause the shells to be slowly extracted part way, but when the hammers have discharged the shells or either of them the discharged shell or shells will, upon breaking-down the gun, be quickly ejected from the barrels.

Our invention consists in the embodiment in a break-down gun of a locking device or sear for controlling the ejector hammers and which is held out of engagement with the ejector hammers or their operating parts except when the firing hammers or either of them are in discharged position, and in which only the breaking-down of the gun will release the ejector hammer from the locking device or sear to cause the ejector of the barrel, in which the cartridge has been fired, to be forced backward under spring action in such a rapid manner as to throw the cartridge shell from the gun.

Our invention also consists of details of construction which, together with the features above specified, will be better understood by reference to the drawings, in which:

Figure 1 is a longitudinal vertical section of the breech portion of a gun embodying our invention; Fig. 2 is a plan view of the fore end showing the ejector hammers; Fig. 3 is an under plan view of the breech end of the barrels; and Fig. 4 is an end view of the barrels and fore end at the breech.

The general construction of the gun, so

far as its breaking-down feature and the hammer-lock mechanism are concerned, does not differ materially from the construction set out in Letters Patent No. 801,862, granted to Ansley H. Fox and dated October 17, 1905, and the mechanism which is more especially embodied in this application is that which relates to the ejecting devices, and it will therefore only be necessary to specifically describe the gun with reference to these improvements.

While we have shown our invention adapted to a double barrel gun, because it is the type more generally used, the improvements are equally applicable to a single barrel gun and it will suffice to describe the details with respect to one barrel only.

Each barrel A is provided with the usual cartridge extractor B which is guided by a leg B' sliding in a longitudinal groove B<sup>2</sup> in the barrel. The end of the extractor leg B' is in position to be struck by the upper end C' of the ejector hammer C which is a lug on the sliding rod c guided in the fore end. The ejector hammer is forced toward the breech of the gun by a coil spring D surrounding the rod c and in this way is adapted to strike the end of the extractor leg B'. To secure proper coöperation between the hammer and leg, the former extends upward through a slotted portion of the fore end as shown in Fig. 2. The ejector hammer C is also provided with a downwardly extending lug C<sup>2</sup> adapted to engage the ejector sear E when the firing hammer H has caused a discharge of the cartridge. This sear E is pivoted at f in the fore end iron F and is controlled by the sear spring I and main spring follower G. The sear spring I is secured to the fore end iron and acts to press the end of the sear into engagement with the lug C<sup>2</sup> of the ejector hammer C to hold it against backward movement until released by the breaking-down of the gun. The main spring follower G has a rod L which extends forward through the hinge l and engages the ejector sear E at a point above the pivot f thereof. The follower G is operated by a main spring K inclosed within the breech iron J and surrounding its rod L. This follower operates the firing hammer H when released by the trigger in the usual way. When the gun is broken down the hammer is reset into

firing position as shown and it is immaterial to our invention what form of mechanism is employed for this purpose.

The ejector sear E is provided with an upwardly extending arm which may have a cam face E' and a hook or lug E<sup>2</sup> at the upper end, and it is by contact with the end of the rod of the main spring follower with said arm that the action of the ejector sear is controlled in its operation upon the ejector hammer C.

The action of the parts will now be understood and may be described as follows: If the gun is opened before firing, the sear E does not control the ejector hammer C and consequently the spring D thereof will, through the hammer C apply pressure to the extractor legs so that the extractor follows the breech iron face J' and causes the shell to be slowly withdrawn from the barrel for a distance equal to the travel of the extractor. In this action it will be seen by reference to Fig. 1, that the breaking-down of the gun will, through the action of the rod L upon the face E' of the sear E, hold the latter away from the hammer C until the latter has passed over its end. If on the other hand, the gun has been fired, then the hammer H will have permitted the follower G to withdraw its rod L so as not to engage the sear C, which being relieved in this respect, is moved by its sear spring I into engagement with the lug C<sup>2</sup> of the ejector hammer and lock it against movement. When the gun is then partly opened, the oscillation of the barrels and fore end cause part E<sup>1</sup> of the sear E to descend with relation to the rear end of the rod L and at the same time this rod is being moved forward by the hammer H assuming a cocked position. This forward movement of the rod D trips the sear E to release the ejector hammer C when the breech end of the barrel is just above the breech iron. If from any cause, the rod D did not project forward sufficiently, it would nevertheless be struck by the lug or hook E<sup>2</sup> (if employed), with the result that the sear is tripped and releases the ejector hammer C. This spring D then acts with great force to impart to the hammer and extractor a sharp blow and thereby throws the discharged shell from the gun leaving it clear for insertion of a fresh cartridge. Upon closing the gun, the parts assume the position indicated in Fig. 1 once more.

We have described our invention with respect to one barrel, but in a double barrel gun such as shown the parts are simply duplicated, being made in right and left form for compactness and for bringing the corresponding parts B' and C close together and centrally of the gun. In Fig. 4, it will be seen that the extractors B B for the two barrels butt against each other and consti-

tute what is known as a split extractor so that the cartridge shell of each barrel may be controlled independently. The cartridge shells will not be ejected from the gun except after they have been fired; and if one only has been fired, then the opening of the gun will throw out or eject the fired shell and only partly and slowly withdraw the unfired cartridge.

The cam surface E' of the ejector sear may be cam shaped if desired but this is not necessary as any point of contact with the rod L at a point above the pivot f will accomplish the same effect.

In the construction shown it will be seen that when the main spring follower G is moved away from the ejector hammer the fired or empty shell will be ejected from the gun and when moved toward the ejector hammer, the unfired cartridge will be gradually withdrawn for a short distance.

We have shown the construction embodying our invention which we have found most advantageous for commercial use, but we do not restrict ourselves to the details thereof as they may be modified without departing from the spirit of our invention.

Having now described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a breech-loading gun the combination of an ejector hammer, with an ejector sear to temporarily lock the hammer against movement when the gun has been fired therewith, and a main spring follower having a part which operates the sear by contact with its operating surface for holding the sear out of engagement with the ejector hammer unless the gun has been fired.

2. In a breech-loading gun the combination of a fore end, an ejector hammer carried by the fore end and having a locking lug, an ejector sear pivoted in the fore end and having its end adapted to engage the lug on the hammer to temporarily lock the hammer against movement when the gun has been fired and also having a cam surface, and a main spring follower having a part which operates the sear by contact with its cam surface for holding the sear out of engagement with the ejector hammer unless the gun has been fired.

3. In a breech-loading gun, the combination of a main spring follower operated by the firing hammer, an ejector mechanism, a controlling sear for temporarily holding the ejector mechanism out of action arranged to be moved by the follower at all times to release the ejector mechanism when the hammer is in cocked position after the gun has been opened.

4. In a breech-loading gun, the combination of a main spring follower operated by the firing hammer, an ejector mechanism, a controlling pivoted spring actuated sear for

temporarily holding the ejector mechanism out of action arranged to be moved by the follower at all times to release the ejector mechanism when the hammer is in cocked position said sear having an upright arm provided with a lug to one side of its pivot with which the follower makes engagement after the gun has been opened.

5. In a breech-loading gun, an ejector mechanism, combined with a sear for locking the ejector mechanism out of action, a follower for the firing hammer having a rod for operating the sear to release the ejector mechanism when the gun is not fired but is opened.

6. In a breech-loading gun having ejector mechanism, a controlling sear for the ejector mechanism consisting of a bell crank formed of the pivoted part E having a face E<sup>1</sup> and lug E<sup>2</sup> to one side of its pivot, combined with means operated by the firing hammer of the gun for coacting with the said face and lug for respectively holding and throwing the sear out of locking engagement with the ejector mechanism when the gun is in cocked condition.

7. In a breech-loading gun, the combination of a spring actuated ejector hammer, a pivoted spring actuated sear to lock the hammer out of action having a face E<sup>1</sup>, a main spring follower connected with the firing hammer and having a forwardly extending part which engages the face E<sup>1</sup> of the sear to hold it out of locking position when the firing hammer is cocked and the gun closed and to throw it out of locking position when the gun is fired and opened.

8. In a breech-loading gun the combination of a spring actuated ejector hammer movable toward the firing hammer under spring action, a firing hammer, a main spring for operating the firing hammer, a reciprocable part movable away from the ejector hammer by the main spring, and a spring actuated sear to lock the ejector hammer when the firing hammer is in fired position and to unlock the ejector hammer

when the reciprocable part is moved away from the ejector hammer and the firing hammer is in cocked position. 50

9. In a breech-loading gun the combination of a spring actuated ejector hammer movable toward the firing hammer under spring action, a firing hammer, a main spring for operating the firing hammer, a reciprocable part movable away from the ejector hammer by the main spring, and a spring actuated sear to normally lock the ejector hammer, but held out of locking position by the reciprocable part when the firing hammer is in cocked position. 60

10. In a breech-loading gun the combination of a spring actuated ejector hammer movable toward the firing hammer under spring action, a firing hammer, a main spring for operating the firing hammer, a reciprocable part movable away from the ejector hammer by the main spring, and a spring actuated sear to normally lock the ejector hammer, but held out of locking position by the reciprocable part when the firing hammer is in cocked position and the gun in firing condition and also when the gun is in fired and broken-down condition. 70

11. In a breech-loading gun the combination of a spring actuated ejector hammer movable toward the firing hammer under spring action, a firing hammer, a main spring for operating the firing hammer, a reciprocable part movable away from the ejector hammer by the main spring, and a sear to lock the ejector hammer against action when the gun is fired and unlock it when the reciprocable part is moved away from the ejector hammer and oscillated in breaking-down the gun. 85

In testimony of which invention, we have hereunto set our hands.

ANSLEY H. FOX.  
GEO. A. HORNE.

Witnesses:

U. WM. JOHNSON,  
ELSIE M. CASPERSON.