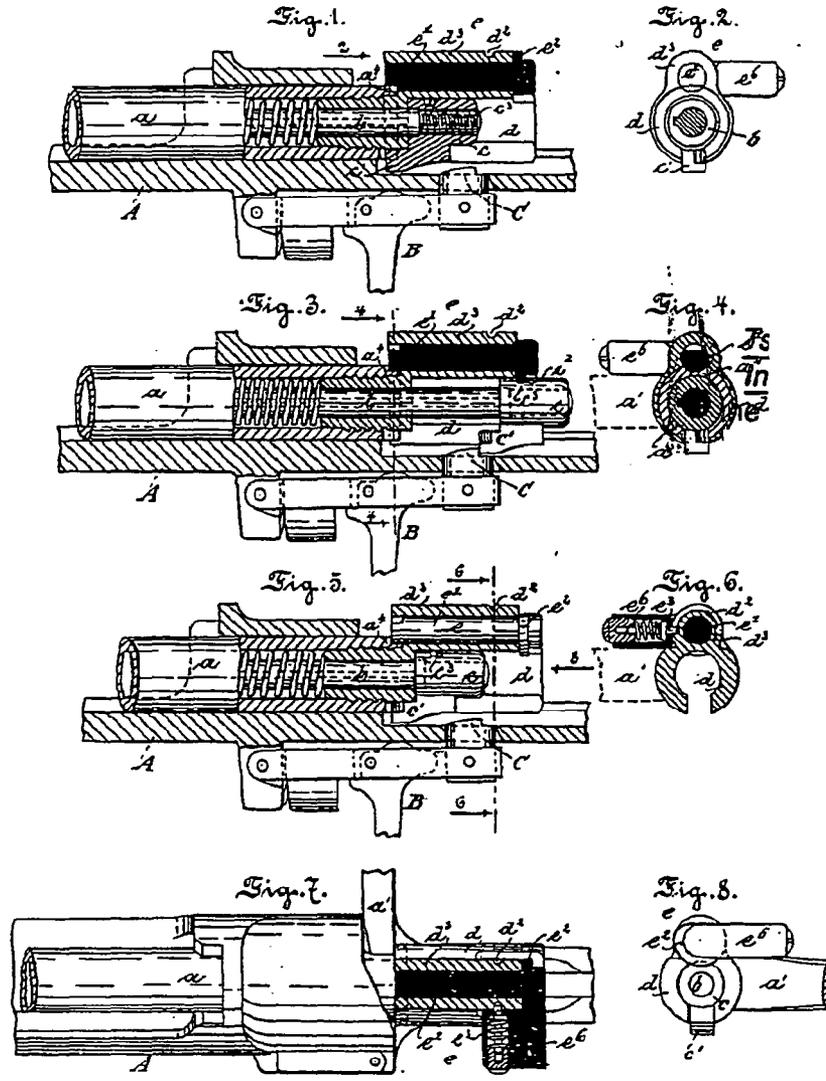


(No Model.)

P. MAUSER.
SAFETY LOCK FOR BREECH BOLTS OF GUNS.

No. 449,352.

Patented Mar. 31, 1891.



WITNESSES:
John Becker
Fred White

INVENTOR:
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UNITED STATES PATENT OFFICE

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TO WAFFENFABRIK MAUSER, OF SAME PLACE.

SAFETY-LOCK FOR BREECH-BOLTS OF GUNS.

SPECIFICATION forming part of Letters Patent No. 449,352, dated March 31, 1891.

Application filed November 12, 1889. Serial No. 330,066. (No model.) Patented in Belgium June 16, 1889, No. 88,375; in England September 30, 1889, No. 15,971; in Italy December 10, 1889, No. 26,450/137; in Germany January 15, 1890, No. 50,384; in Spain February 1, 1890, No. 10,226, and in Austria-Hungary March 29, 1890, No. 48,072 and No. 8,578.

To all whom it may concern:

Be it known that I, PAUL MAUSER, a subject of the Emperor of Germany, residing in Oberndorf-on-the-Neckar, in the Kingdom of Würtemberg, Germany, have invented certain new and useful Improvements in Safety Devices for Breech-Loading Bolt-Guns, of which the following is a specification.

This invention is the subject-matter of Letters Patent in England, No. 15,371, dated September 30, 1889; Italy, No. 26,450/137, dated December 10, 1889; Germany, No. 50,384, dated January 15, 1890; Spain, No. 10,226, dated February 1, 1890; Austria-Hungary, No. 48,072/8,578, dated March 29, 1890, and in Belgium, No. 86,375, dated June 15, 1889.

This invention relates to fire-arms of the class known as "bolt-guns," and more particularly to the class wherein the bolt has an oscillatory as well as a longitudinal movement. It also relates to guns generally which have a longitudinally-moving firing-pin.

My invention aims to provide means whereby the bolt of a gun of this class can be secured in its locked position at will, and also to provide means for locking the trigger of the gun, so that the latter cannot be fired; and it also provides means whereby both of these results can be accomplished by one operation.

In carrying out my invention I construct a safety device which when moved into one position will lock the bolt, so that the latter cannot be oscillated, and when moved into another position will permit the oscillation thereof, and I provide a similar safety device for securing the firing-pin. These I usually form integrally, so that by one movement both the bolt and the firing-pin can be either locked or unlocked, as desired.

This invention is especially applicable to bolt-guns constructed according to the "Mauser system;" but it may also be applied to other guns, and it is applicable to either what are called "single-loaders or repeaters," and especially applicable to bolt-guns in which the small lock is constructed independently of the firing-pin and coupled with the bolt—

such, for instance, as the construction shown in my application for Letters Patent filed November 7, 1889, Serial No. 329,478.

In the accompanying drawings, in which I have shown my invention as applied to the last-named construction of gun, Figure 1 is a fragmentary vertical axial section of those parts of the lock mechanism of the gun to which my invention relates, the parts being shown in the position occupied immediately after firing the gun. Fig. 2 is a front elevation of the small lock and firing-pin detached, the forward end of the latter being in section. Fig. 3 is a fragmentary axial section, similar to Fig. 1, showing the gun cocked and the firing-pin and bolt locked by the safety device. Fig. 4 is a vertical cross-section of the small lock, bolt, and firing-pin removed, cut on the line 4-4, in Fig. 3. Fig. 5 is a fragmentary axial section similar to Fig. 1, showing the gun fired and the safety device in the locked position. Fig. 6 is a cross-section of the small lock and safety device, cut on the line 6-6 in Fig. 5, and looking in the direction of the arrow. Fig. 7 is a fragmentary plan of Fig. 5, the safety device and small lock being in partial horizontal section, and Fig. 8 is a rear elevation of the safety device, small lock, firing-pin and bolt removed.

Referring to the drawings, A is the breech-case of the gun; B, the trigger thereof; C, the trigger-beak; a, the bolt working in the case A; b, the firing-pin; c, the pin-nut thereof; d, the small lock; and e the safety device.

The bolt a is constructed to oscillate in the breech-case A, and to move longitudinally therein during the loading and unloading of the gun. It has a handle a' by which it is operated, which is turned down to the right when the bolt is forward and in the locked position, and is turned vertically when the bolt is in the unlocked position. The firing-pin b works within the bolt a, being actuated by a coil-spring, as usual, and its rearend plays through a hole in the small lock d and carries a pin-nut c, on which is formed the nose c' for engagement with the trigger-beak C. The firing-pin b is movable longitudinally in-

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dependently of the small lock *d*, but cannot be oscillated relatively thereto. The small lock *d* is coupled to the bolt *a*, preferably by a swiveled connection of any well-known construction. In the drawings it is shown as constructed with a screw-threaded neck which engages an internal screw-thread in the end of the bolt *a*. The small lock cannot be oscillated, but the bolt is capable of an oscillatory movement of about ninety degrees relatively to the small lock.

In guns of this character it is important to provide means for securing the bolt in its locked position, so that while handling the gun there will be no liability of the bolt accidentally turning to the unlocked position and sliding back and forth in the breech-case, which sometimes happens while the gun is being used for drilling purposes, or while the soldier is exercising with an unloaded arm. It is also desirable that the firing-pin *b* shall be locked at times so that the gun cannot be accidentally fired. This I accomplish by means of a safety device which is preferably constructed to lock either one or both of these parts, as desired. This can be constructed in various ways, but I prefer to construct it as shown in the drawings, wherein the safety device *e* consists of an oscillatory cylindrical shaft *e'*, mounted in a cylindrical hole, preferably in a ridge *d'* on the upper part of the small lock *d* and extending in an axial direction parallel with that of the bolt and firing-pin. The shaft *e'* is preferably so mounted that it projects within the peripheral plane of the end of the bolt *a* at its forward end, and is cut out or recessed at one side, so that when it is turned to the unlocked position this recess will permit the oscillation of the bolt relatively to the shaft *e'*. The end of the bolt is preferably constructed with a recess *a'*, adapted when the lock is in the locked position to engage with the forward end of the shaft *e'*, whereby the movement of the bolt relatively to the shaft will be prevented. The recess *a'* in the bolt *a* is so constructed that when the bolt is in the locked position with its handle *a'* turned down to the right, the recess will be in line with the shaft *e'* of the safety device, so that upon turning the latter into the locked position it will engage with the bolt and secure the latter.

For locking the firing-pin *b* I construct its end *c* with a shoulder or notch *c'* in its upper side, and I provide the rear end of the shaft *e'* with a collar or flange *e''*, so constructed that when the shaft is turned into the locked position and the firing-pin is full-cocked the flange *e''* will engage with the shoulder *c'* and prevent the forward movement of the firing-pin in case it should be released from the trigger-beak *O*. When the shaft *e'* is turned to the unlocked position, its flange *e''* will be removed from the shoulder *c'* and the firing-pin can move forward when the trigger is pulled and the gun can be fired.

The safety device is preferably constructed with a thumb-piece or handle *e'*, which projects laterally from the rear end of the shaft *e'*, and carries a spring-catch or snap *e''*, the end of which engages with a groove in the periphery of the small lock *d* and prevents the withdrawal of the shaft *e'* therefrom. Two slight depressions in the opposite ends of this groove engage the end of the snap *e''*, and serve to hold the safety device in the locked or unlocked position, as may be.

In operating a fire-arm constructed with my improvements, when the firing-pin has been fully cocked and the bolt *a* turned to its locked position, if it is desired to lock the gun the safety device *e* is turned to its locked position, so that the projecting end of the shaft *e'* enters the notch *a'* of the bolt, thereby preventing the unlocking of the latter, and the flange *e''* abuts against the shoulder *c'* of the firing-pin, thereby preventing the forward movement of the latter. In this position the thumb-piece *e'* of the safety-device stands on the right-hand side of the gun. When it is desired to fire the gun, the safety device is unlocked by throwing its thumb-piece *e'* to the left-hand side, thereby turning the shaft *e'*, so that its recessed portion will permit the oscillation of the bolt and removing its flange *e''* from the path of the shoulder *c'* of the firing-pin, so that upon pulling the trigger the firing-pin can move forward and fire the gun. After the gun has been fired, the bolt *a* can be secured in its locked position by again throwing the safety device *e* into its locking position, so that its projecting forward end will engage with the notch *a'* of the bolt. When the gun is to be reloaded, the safety device must be thrown to its unlocked position in order that the bolt *a* can be oscillated and drawn back sufficiently to discharge the used cartridge and reload the gun and cock it, whereupon, if desired, the gun can be again locked.

It will be understood that my invention can be variously modified without departing from its essential features, and that I do not limit myself to the construction herein described, which is the preferred form of my invention.

It will also be understood that certain features of my invention can be used independently of others, and that it can be applied to other constructions of gun than the one shown.

What I claim is, in fire-arms of the class known as "bolt-guns," the following defined novel features and combinations, substantially as hereinbefore specified, namely—

The combination, with the breech-case, an oscillatory bolt working therein, a firing-pin working in said bolt, and a small lock connected to said firing-pin and swiveled to the end of said bolt, said small lock so connected to the firing-pin that the latter can move longitudinally relatively thereto, of a lock carried by said small lock and constructed to en-

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gage with said bolt and said firing-pin, and when in one position to prevent an oscillatory movement of said bolt and a forward movement of said firing-pin, and when in the other position to permit such movements, said lock consisting of an oscillatory cylindrical shaft *e'*, mounted in said small lock and having a thumb-piece *e'* and a snap-catch *e'* for holding it in position.

This specification signed by me this 2d day 10 of September, 1889.

PAUL MAUSER.

Witnesses:

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THEODORE ABENHEIM.

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