M. HERMSDORF.

SAFETY DEVICE FOR GUN CLOSURES.

APPLICATION FILED JAN. 24, 1910.

987,135. Patented Mar. 21, 1911.

Fig. 1.

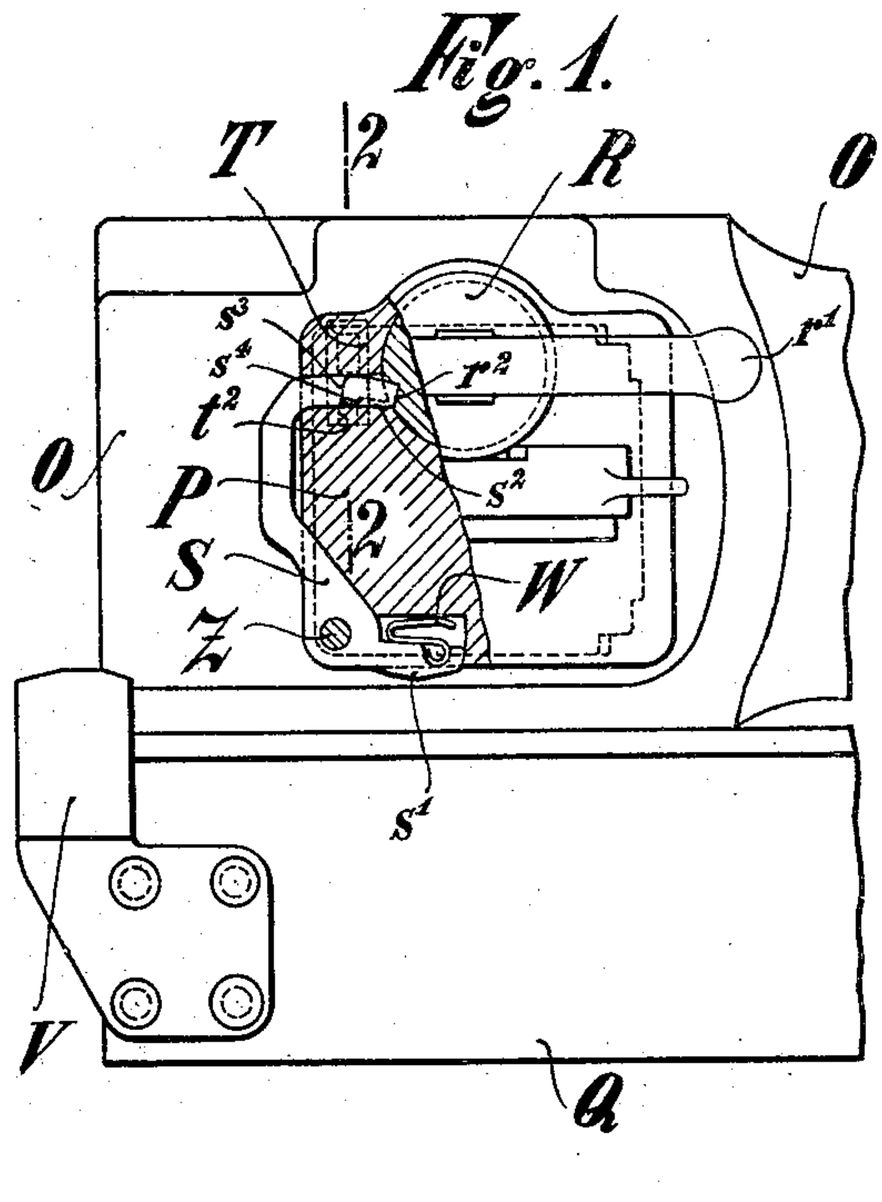


Fig. 2.

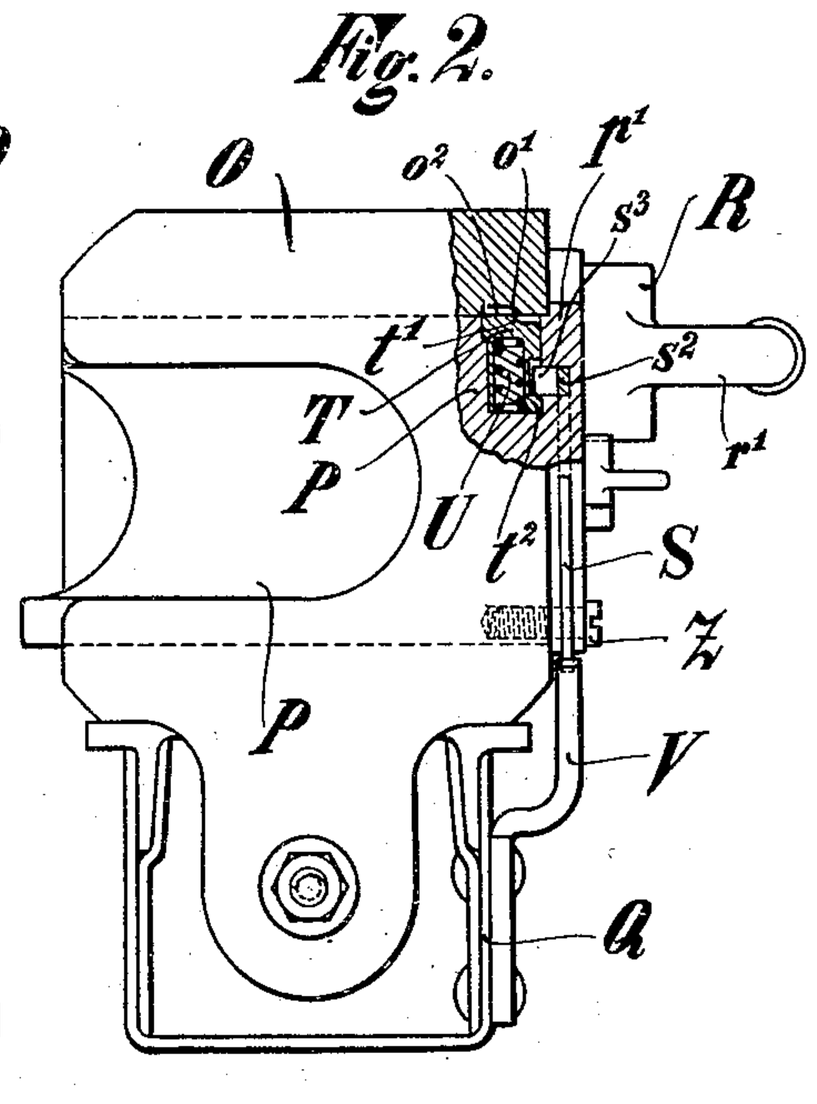


Fig. 3.

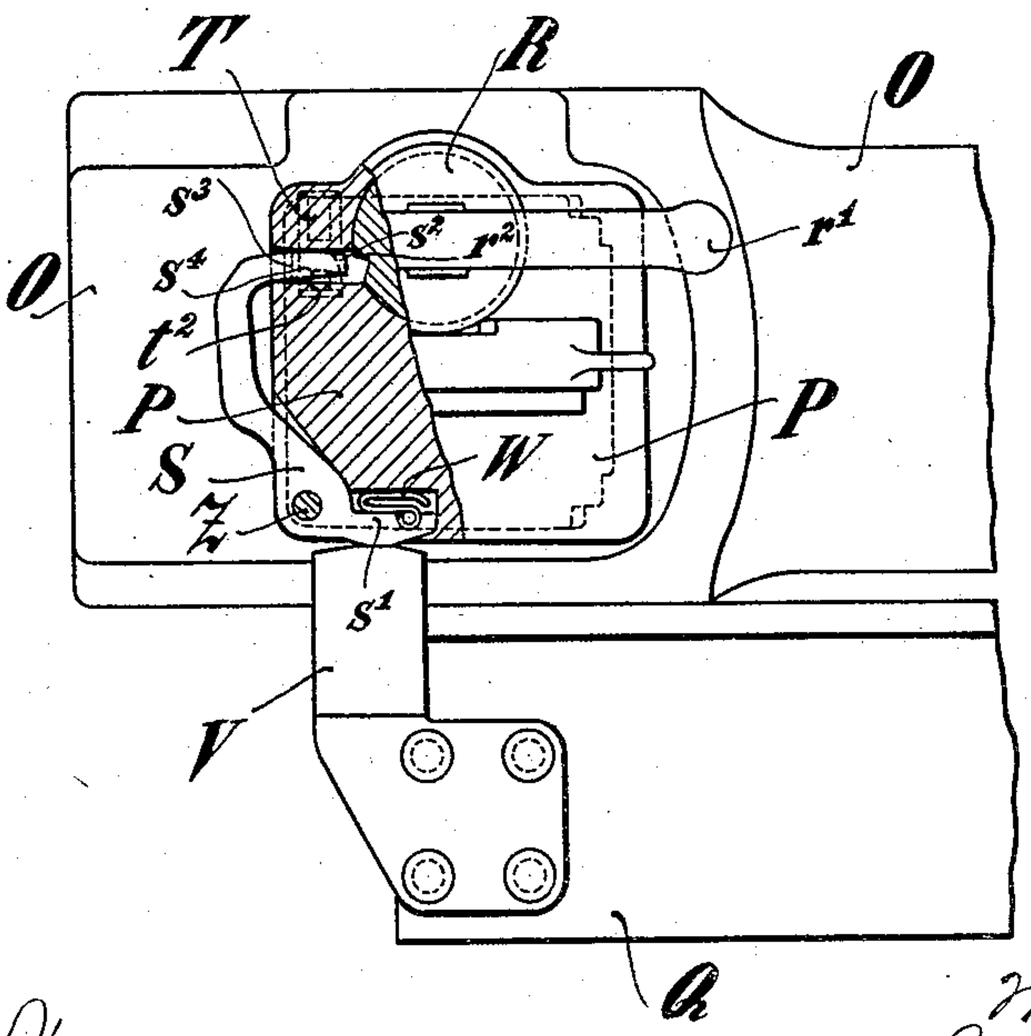
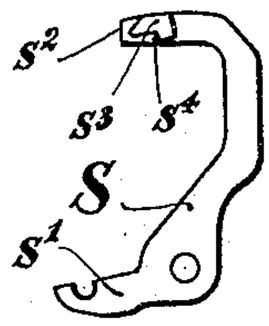


Fig. 4.



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SAFETY DEVICE FOR GUN-CLOSURES.

987,135. Specification of Letters Patent. Patented Mar. 21, 1911.

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To all whom it may concern:

Be it known that I, MAX HERMSDORF, a subject of the Emperor of Germany, and a resident of Essen-on-the-Ruhr, Germany, have invented certain new and useful Improvements in Safety Devices for Gun-Closures, of which the following is a specification.

The present invention relates to a safety device which, in case of misfire, prevents the breech block being opened and the improved safety device differs from other safety devices of this type mainly by being reliable in its action.

The accompanying drawings show the invention applied to a gun wedge-closure with operating screw, by way of example.

Figure 1 is a side view, partly in section, of the parts of the gun to which the invention relates, Fig. 2 is a rear view, partly in section on line 2—2, Fig. 1, Fig. 3 is a view corresponding to that shown in Fig. 1, but showing some of the parts in a different position, and Fig. 4 is a detail view.

In the drawings, O is the gun barrel, Q the slide-track carrier, P the breech block, R the operating screw and r^1 the crank of the screw. The screw is rotatably but non-slidably mounted in the breech block, and is provided with screw-threads of high pitch which engage in corresponding internal threads in the breech so that, by turning the screw, the closure can be opened and closed. This construction is commonly known and, therefore, need not be described in detail. A latch S formed as a two-armed lever is rotatably mounted on a horizontal pin Z in a recess in the breech block P. A spring W (Figs. 1 and 3), which abuts against the arm s^1 of the latch S, tends to hold the latch in the position shown in Fig. 1, in which the other arm s^2 of the latch projects into a notch r^2 in the operating screw R. The arm s^2 carries on its inner side a projection s^3 which on its under side is provided with a notch s^4 (see especially Fig. 4). In the breech block is also mounted a bolt T which is vertically slidable in the breech block. A spring U (Fig. 2) tends to press the bolt T against the upper wall of the breech opening. The bolt T is provided on its upper side with an inclined face t^1 which, when the closure is closed, can lie in a recess o^2 (Fig. 2) provided in the upper wall of the breech opening. The bolt T is further provided with a nose t^2 which is adapted to engage in the notch s^4 in the latch S. On the slide-track carrier Q is secured a striker V which is located in the path of movement of the arm s^1 of the latch S when the latter is in the position shown in Fig. 1 (the locking position).

The relative position of the parts shown in Figs. 1 and 2 corresponds to their position of rest before firing. The closure is closed. The latch S has its arm s^2 engaging in the notch r^2 in the operating screw. The screw is, therefore, prevented from turning, or in other words the closure is locked. The bolt T is held out of engagement with the recess o^2 in the breech by that part of the projection s^3 which is located behind the notch s^4.

Directly after the commencement of the recoil of the gun barrel incident to firing, the arm s^1 of the latch hits the striker V and this causes the latch S to be turned on its pin Z against the action of the spring W in such a manner that the arm s^2 leaves the notch r^2 in the operating screw (Fig. 3). Simultaneously therewith the lateral projection s^3 on the latch S is moved rearwardly to such an extent that the spring U causes the nose t^2 on the bolt T to snap into the notch s^4 in the projection s^3. This causes the inclined face t^1 on the bolt T to come into abutment with the inclined face o^1 on the breech. Due to the engagement of the nose t^2 in the notch s^4, the latch S is held in its withdrawn position during the further recoil and during the counter-recoil. If the operating screw is turned to move the breech block out of the gun barrel, the inclined face t^1 slides along on the inclined face o^1 and this causes the bolt T to be forced downwardly so that that part of the projection s^3 which is located to the rear of the notch s^4 is moved by the spring W past the nose t^2. The arm s^2 of the latch S then comes into abutment with the circumference of the screw R as the notch r^2 was moved out of the path of movement of the arm s^2 when the operating screw was turned to open the closure. When, at the end of the closing movement of the breech closure, the notch r^2 in the operating screw again becomes located opposite the arm s^2 of the latch S, the spring W causes the arm s^2 to snap into the notch r^2 and the closure is again secured against being opened. However, if the pulling of the firing device fails to effect ignition of the

driving charge and a so-called delayed ignition may be expected, the parts remain in the position shown in Figs. 1 and 2. Before the closure is opened, the latch S must, therefore, be moved by hand to such an extent that its arm s^2 passes out of engagement with the notch 7^2 in the operating screw.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:—

1. In a gun, the combination with the gun barrel, the gun closure and the operating mechanism for opening and closing the closure, of a safety device mounted on the closure for preventing opening of the closure in case of misfire, and a striker mounted on a non-recoiling part of the gun and adapted to move said safety device out of its locking position during the movement of the gun barrel after firing.

2. In a gun, the combination with the gun barrel, the gun closure and the operating mechanism for opening and closing the closure, of a safety device mounted on the closure for preventing opening of the closure in case of misfire, and a striker mounted on a non-recoiling part of the gun and adapted to move said safety device out of its locking position during the movement of the gun barrel after firing, said safety device comprising a latch having a part located in position to be actuated by said striker during the movement of the gun barrel.

3. In a gun, the combination with the gun barrel, the breech block and the operating mechanism for opening and closing the breech block, said mechanism having a part provided with a notch, of a safety device for preventing opening of the breech block in case of misfire, said safety device comprising a spring-pressed latch mounted on the breech block and having two arms, one of said arms being adapted to engage in said notch, and a striker located in the path of movement of the other arm of the latch and adapted to coöperate with said other arm to withdraw the safety device during the movement of the gun barrel after firing.

4. In a gun, the combination with the gun barrel, the breech block and the operating mechanism for opening and closing the breech block, said mechanism having a part provided with a notch, of a safety device for preventing opening of the breech block in case of misfire, said safety device comprising a spring-pressed latch mounted on the breech block and having two arms, one of said arms being adapted to engage in said notch, and a striker located in the path of movement of the other arm of the latch and adapted to coöperate with said other arm to withdraw the safety device during the movement of the gun barrel after firing, and a bolt mounted on the breech block and adapted to retain the latch in the withdrawn position; said bolt being adapted to be shifted by the breech block into a position in which it releases said latch.

The foregoing specification signed at Barmen, Germany, this 31st day of December, 1909.

MAX HERMSDORF. [L. S.]

In presence of—
OTTO KÖNIG,
CHAS. J. WRIGHT.