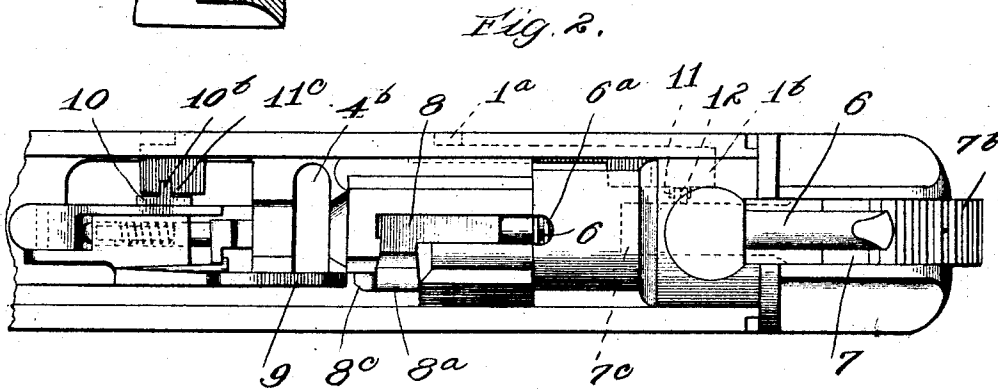
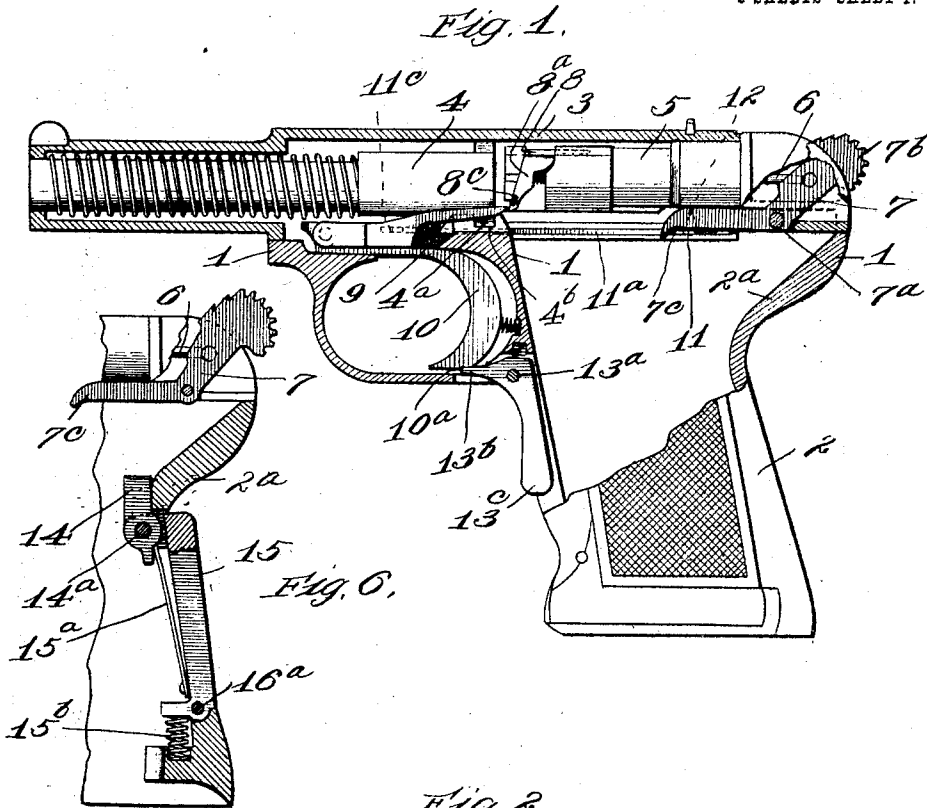


F. T. RUSSELL.
SAFETY ATTACHMENT FOR FIREARMS.
APPLICATION FILED AUG. 21, 1911.

1,037,544.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.



Witnesses:

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Inventor:

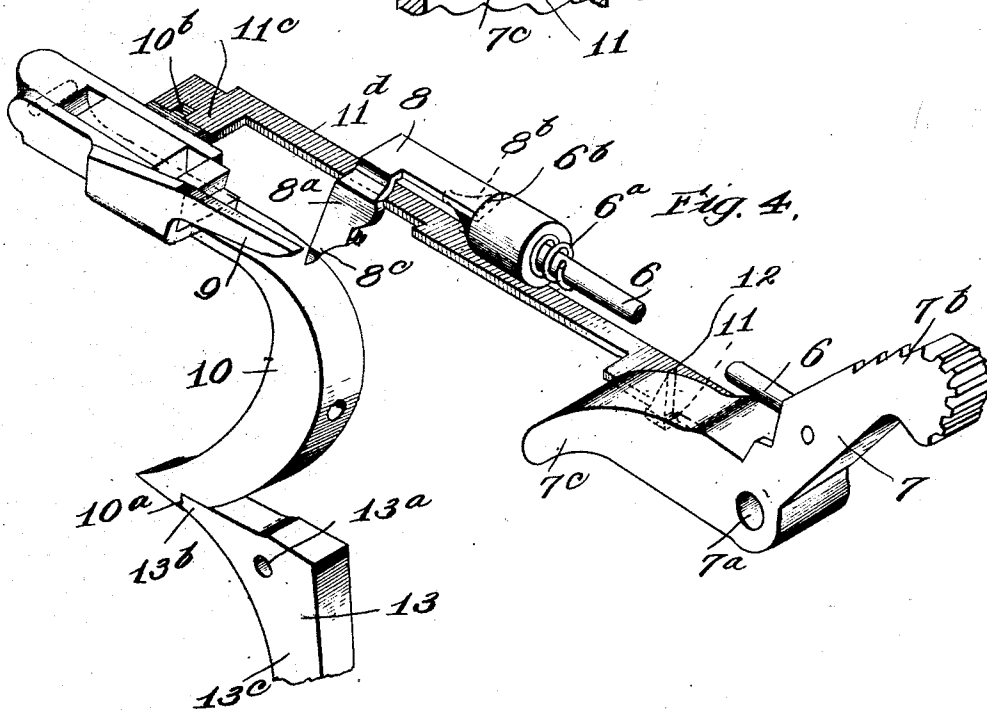
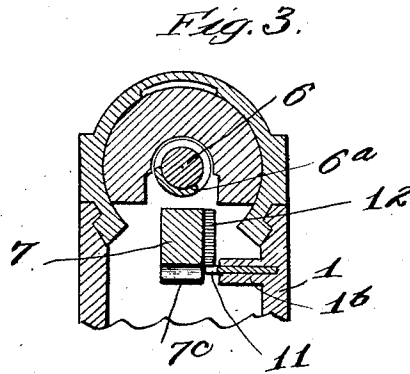
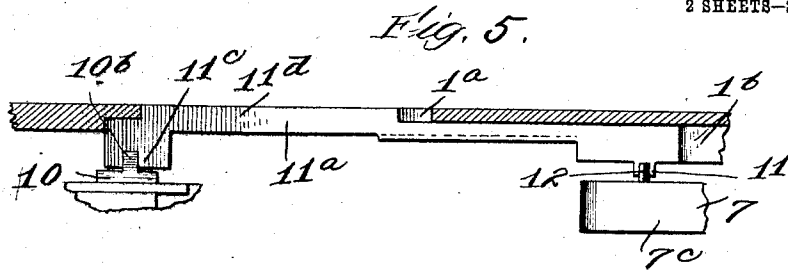
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2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

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SAFETY ATTACHMENT FOR FIREARMS.

1,037,544.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed August 21, 1911. Serial No. 645,120.

To all whom it may concern:

Be it known that I, FREDERICK T. RUSSELL, a citizen of the United States, and residing at 4614 Greene street, in the city of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Safety Attachments for Firearms, of which the following is a specification.

The present invention relates to means whereby discharge of a firearm, from any cause, is prevented until it is grasped in position for intentional firing.

The present invention proceeds upon the theory, primarily, of preventing the striker reaching the primer of the cartridge, even though it may be released from the sear; the means employed being made to operate upon the principle of interposing in the path of the striker or some part connected therewith, a barrier which will arrest the striker before it reaches the primer; said arresting means or barrier being automatically withdrawn from the path of the member which it intercepts by the intentional manipulation of the pistol for firing. In the preferred embodiment, the barrier is in the nature of a secondary sear, which will catch the striker, or a member controlling the striker, immediately upon its release from the sear proper, unless said secondary sear has been withdrawn from its normal position by the manipulation incident to firing (preferably a full movement of the trigger); and said secondary sear being located to arrest the striker in a position which will leave it sufficient throw to yet discharge the cartridge, in the event that attempt is made to fire the pistol after an accidental tripping off of the striker and the automatic safety has taken effect; the obvious advantage of this embodiment being that the pistol is always safe, yet always ready for firing without requiring any movement or exercise of thought other than the normal firing manipulation. This embodiment of the invention involves the further advantage that the full pull of the trigger, necessary to release the primary sear and remove the secondary or safety sear from the path of the parts which move on firing, affords opportunity for introducing a dogging member for the main trigger, in the nature of a secondary trigger, which dogging member is withdrawn by the act of gripping the piston for firing, but which

is normally in position to prevent any such movement of the main trigger, under its own inertia when the gun meets with external shock, as will be sufficient to withdraw the secondary or safety sear from the path of the member which moves in discharging the gun.

According to the modified construction of the invention embodying some of its features, the barrier interposed in position to bar the movement of the striker is in the nature of a block that is connected with, and withdrawn by a grip lever, inserted in the rear side of the pistol grip, in position to receive pressure from the hand when the pistol is manipulated for firing, and in the disclosed embodiment of this form, the location is such that if withdrawn from the arresting position, the striker simply moves gently toward the primer without sufficient force to explode it.

The invention will be fully understood upon reference to the accompanying drawing, in which,

Figure 1 is a vertical sectional view of a known type of firearm to which my invention is applied by way of illustration, said firearm embodying in its organization, a frame, a barrel fixed against longitudinal movement on the frame, and a breech slide which moves longitudinally on the frame and relatively to the barrel for the purpose of opening and closing the breech; Fig. 2 is a plan view, on an enlarged scale, of the frame shown in Fig. 1, with the barrel and breech slide omitted, but with the firing mechanism in place; Fig. 3 is a transverse section of Fig. 1 on a vertical line; Fig. 4 is a perspective view of the firing mechanism, minus the parts upon which it is mounted in practice; Fig. 5 is a detail view showing the secondary sear in its relation to the cocking lever and to the trigger; and Fig. 6 is a detail view of the rear end of the firearm, shown in Fig. 1, but having applied thereto a modified construction by which some of the results of my invention are realized.

1 represents the frame having a grip 2, 3 the breech slide mounted to slide longitudinally upon the frame and 4 the barrel mounted in and supported by the breech slide, and having a lug 4^a which enters a seat 4^b in the frame (Figs. 1 and 2) to permanently fix the barrel 4 against partaking of the longitudinal movements of the breech slide, in which it is supported. These three

main parts of the firearm, selected for purposes of illustrating the invention to be hereinafter described, are so related that when the gun is fired, the breech slide 3 moves rearward under the reaction of the powder gases to open the breech and throw out the spent shell and introduce a fresh cartridge, in a manner well known in the art.

Mounted in the breech slide 3 is a breech plug 5, which closes the rear end of the barrel when the breech slide is at its forward limit, and carried by this breech plug is the striker 6 having a projecting spring 6^a, said striker being connected at its rear end with the cocking lever 7, which is fulcrumed at 7^a and provided with the thumb-piece 7^b and tail-piece 7^c, which latter drags over the surface 2^a of the grip when the breech slide is drawn rearward, in order to cock the striker.

8 represents the sear which is suitably fulcrumed upon the axis 8^a and has an end 8^b in position to engage the shoulder 6^b of the striker 6, and an end 8^c in position to receive the sear tripper 9, which may be moved rearward by the sliding trigger 10 to trip off the sear and release the striker.

The parts thus far described form no part of my present invention, but are merely selected for purposes of illustration and need not, therefore, be described in greater detail.

There is danger that the sear 8 be jarred out of arresting relation to the shoulder 6^b by careless handling of the weapon or by dropping it; particularly if the shoulder 6^b becomes slightly upset by continued impact against the arresting end 8^b of the sear. To render the firearm safe, in the event of such an occurrence, I provide a barrier, preferably in the path of the tail 7^c of the cocking lever 7, which will arrest the cocking lever and through it the striker 6 before the point of the latter reaches the primer. According to the embodiment shown in Figs. 1 to 5, this barrier is in the form of a secondary sear 11 which normally stands in the path of a projection 12 on the tail 7^c of the cocking lever 7, but which is so connected with the trigger 10, as for instance, through the medium of the slide bar 11^a, which carries the sear 11, that when the trigger 10 is moved rearward to discharge the firearm, the sear 11 is withdrawn from the path of the projection 12 and the cocking lever is free to execute its swinging movement incident to the forward drive of the striker. The range of movement necessary to take the secondary sear 11 out of the path of the projection 12, is considerably more than any movement of the parts that can result from the inertia of the parts when properly proportioned, due to external shock applied to the firearm. In other words, the release of the cocking

lever can result only from a relatively long pull of the trigger, such as results from the act of intentionally firing the gun. If, however, it is desired to introduce a further safe-guard against movement under inertia of the parts and at the same time lock the trigger against movement in the direction of releasing the striker by any other than a pull resulting from gripping the firearm in position for intentional firing, an auxiliary trigger or dogging device 13 may be introduced in the path of the trigger, as for instance by fulcruming it at 13^a and having its end 13^b projecting into the path of a shoulder 10^a on the trigger, while its free end 13^c is presented in position to receive pressure from the fingers in the act of grasping the grip of the pistol. As a convenient means for connecting the bar 11^a with the trigger 10, and for the purpose of restraining releasing movement of said bar independently of the trigger, said trigger and bar are interlocked by a rabbet connection 10^b, 11^c, which brings the bar under control of the trigger in both longitudinal directions. A further advantage of the connection 10^b and 11^c arises from the ready separability of the connection, which permits removal of the trigger in taking down or assembling the gun, which is in keeping with the general design of the pistol selected for illustration, wherein the several parts are generally assembled without the use of screws or the like.

In order to mount the bar 11^a slidingly upon the frame and permit its ready introduction or removal, it is fitted in a slot 1^a, 1^b in the frame. The part 1^a of said slot extends through the wall of the frame and is of sufficient length to permit the offset part 11^d of the bar 11^a, to swing laterally outward after the connection 10^b, 11^c with the trigger has been relieved by the removal of the trigger and the bar has been permitted to slide rearward sufficiently to clear its forward end.

The operation of the device described with reference to Figs. 1 to 5 is as follows: When the pistol is grasped in position for firing, the trigger dog 13 is withdrawn from the path of the trigger 10 and the latter is free to move rearward under the pull of the trigger finger to bring the sear tripper 9 against the sear 8 and swing the end 8^b upward out of the path of the shoulder 6^b, so that the striker may be driven forward by the spring 6^a. Simultaneously, the secondary sear 11 is moved rearwardly by the trigger connection through the medium of the bar 11^a, until said secondary sear passes out of the path of the projection 12 so that the cocking lever 7, which is in controlling relation to the striker 6, is free to execute its swinging movement upon its fulcrum 7^a and the pistol may be fired. If

the pistol has been jarred off so that the sear 8 has released the striker while the pistol is in the pocket or previous to the time when it is required for use, the secondary sear 11 will have arrested the striker through the medium of the cocking lever 7 and what would otherwise result in a dangerous unintentional firing of the pistol, will have been avoided. The pistol is nevertheless still in condition for immediate use, for while the sear 8 accurately designed to develop the desired trigger pull, is no longer in control of the striker, and while an abnormal pull may be required to overcome the friction between the parts 11 and 12, nevertheless the secondary sear 11 may be removed from the path of the projection 12 by imparting the usual range of intentional movement to the trigger 10 and the striker which will then be released, will still have a sufficient throw to detonate the primer. The invention thus insures a safety device operating upon the rational principle of arresting the firing mechanism under conditions which cannot possibly be disturbed by inertia of the parts at the time of any external shock, but the pistol is still left in condition for immediate use notwithstanding the safety feature has entered into effect and this use may be availed of with no other than the ordinary application of thought and manipulation incident to normal firing.

According to the embodiment shown in Fig. 6, the tail-piece 7^c of the cocking lever 7 encounters the block 14 during the firing movement of the striker, unless said block has been previously withdrawn by pressure against the lever 15, which is fulcrumed at 16^a in position to receive pressure from the hand in the natural gripping operation incident to intentional firing. The lever 15 carries the block 14 through a pivotal connection 14^a as well as a spring 15^a which engages the block 14 in such position as to tend normally to swing the block upon its pivot 14^a to a position out of the path of the tail 7^c; parts being, however, so related to the rear wall 2^a of the grip that when the lever 15 is thrown outward by its spring 15^b, the block 14 encounters the wall 2^a for the combined purpose of throwing the block into the path of the tail 7^c and arresting further outward movement of the lever 15. The block 14 is of such dimensions that it does not arrest the cocking lever 7 until the greater portion of the throw of the striker 6 has been traversed and if the gripping lever 15 be then pressed, intentionally or otherwise, the striker will be gently released without sufficient force to detonate the primer.

I claim:—

1. In a firearm, a striker, independent primary and secondary sears, each posi-

tioned to arrest the striker in cocked position and a finger trigger having releasing connection with both of said sears and adapted to fire the arm when either of said sears is in effect; the secondary sear comprising a sliding member having connection with the finger trigger and adapted to slide into and out of a position in the path of the part connected with the striker.

2. In a firearm, a striker, a sear for normally arresting the striker in cocked position and a secondary sliding sear in the path of a part moving with and controlling the striker; said secondary sear having a connection through which it is moved by the normal act of firing the arm.

3. In a firearm, a striker, a sear for normally arresting the striker in cocked position, a secondary sliding sear in the path of a part moving with and controlling the firing movement of the striker and located to arrest the striker near its cocked position and with sufficient remaining throw in the striker to fire the charge, and a releasing connection for said secondary sear through which it is removed from the path of the part with which it engages by the act of firing the pistol.

4. In a firearm, a striker, a sear for normally arresting the striker in cocked position, a secondary sliding sear adapted to arrest the striker near its cocked position, after being released by the sear, a trigger for releasing the sear and a connection through which said trigger also releases the secondary sear.

5. In a firearm, a striker, a sear for normally arresting the striker in cocked position, a secondary sliding sear adapted to arrest the striker near its cocked position, after being released by the sear, a trigger for releasing the sear and a connection through which said trigger also releases the secondary sear; said trigger also preventing movement of the secondary sear independently of the trigger.

6. In a firearm, a striker, a sear for normally arresting the striker in cocked position, a secondary sliding sear adapted to arrest the striker near its cocked position, after being released by the sear, a trigger for releasing the sear and a connection through which said trigger also releases the secondary sear; said trigger also preventing movement of the secondary sear independently of the trigger and having a trigger dog normally entering the path of the trigger and preventing its releasing movement, said dog releasing the trigger on gripping the firearm for action.

7. In a firearm, a striker, a sear for normally arresting the striker in cocked position, a secondary sliding sear, a cocking lever in controlling relation to the striker and which is in turn controlled by the secondary sear,

whereby the latter is adapted to arrest the striker near its cocked position, after the sear has accidentally released the striker, and a trigger having released connection 5 with the sear and also with the secondary sear, whereby an intentional pull of the trigger will move first the secondary sear and thereupon the sear from their arresting positions.

10 8. In a firearm, a striker, a sear adapted to arrest the striker in cocked position, a secondary sear adapted to arrest the striker

near its cocked position, after it is released by the sear, a sliding bar carrying said secondary sear and a trigger having a releasing connection with the sear and a controlling connection with said sliding bar. 15

The foregoing specification signed this eighteenth day of August, 1911.

FREDERICK T. RUSSELL.

In presence of—

CHAS. COBB VAN RIPER,
DOROTHY E. YONKER.