

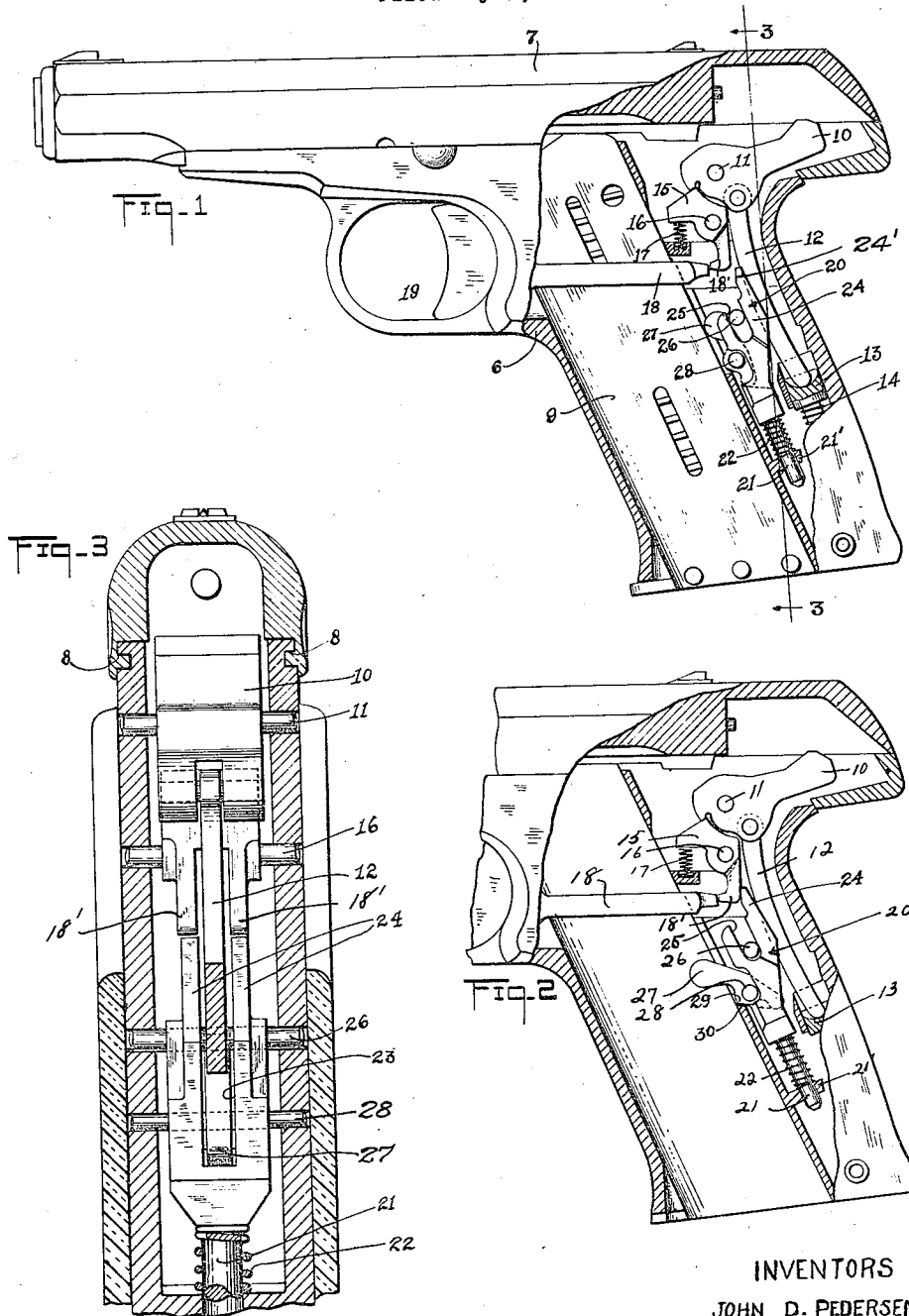
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MAGAZINE SEAR LOCK FOR FIREARMS

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WITNESS  
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# UNITED STATES PATENT OFFICE.

JOHN D. PEDERSEN, OF JACKSON, WYOMING, AND CRAWFORD C. LOOMIS, OF ILION, NEW YORK; SAID LOOMIS ASSIGNOR, BY MESNE ASSIGNMENTS, TO REMINGTON ARMS COMPANY, INC., OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

## MAGAZINE SEAR LOCK FOR FIREARMS.

Application filed May 1, 1920. Serial No. 378,125.

*To all whom it may concern:*

Be it known that we, JOHN D. PEDERSEN and CRAWFORD C. LOOMIS, citizens of the United States residing, respectively at Jackson, in the county of Lincoln, State of Wyoming, and at Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Magazine Sear Locks for Firearms, of which the following is a specification.

In the use of firearms having removable cartridge magazines, serious accidents often occur because the user mistakenly thinks that the removal of the magazine unloads the arm. This is not necessarily the case as frequently an unused cartridge remains in the chamber. It is the object of our present invention to prevent accidents of this kind by providing means which will automatically prevent firing of the arm when the magazine is partly or entirely removed. This means will preferably consist of a safety latch spring-tensioned to a position where it will lock the firing mechanism against operation, and means operated by the insertion of the magazine for withdrawing said latch from the safety position.

More specifically, it is an object of our invention to provide an upwardly spring-pressed reciprocable safety latch lying immediately behind the magazine and capable of locking the sear against operation, and means operated by the insertion of the magazine for withdrawing said latch from the sear.

With these and incidental objects in view, the invention consists in certain novel features of construction and combination of parts which are set forth in the appended claims and a preferred form of embodiment whereof is hereinafter described with reference to the drawings which accompany and form part of the specification, wherein:—

Fig. 1 is a side elevation of an automatic pistol, with parts broken away to more clearly show the mechanism.

Fig. 2 is a view similar to Fig. 1 with the magazine removed.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1 looking in the direction of the arrows.

In said drawings the numeral 6 indicates the frame of an automatic pistol or other

firearm serving as a support in the present instance for a reciprocable action slide 7. The frame is provided with a suitable recess for receiving the magazine 9 which may be held in place in any desired way. The numeral 10 indicates impact means such as a hammer mounted on a cross pin 11. Pivotaly connected to the hammer is the link 12, the other end of which is seated against the spring follower 13 upwardly impelled by the spring 14. The hammer is held in retracted position by a suitable sear as 15 carried by the cross pin 16 and held in operative position by a suitable sear spring 17. The trigger bar 18 of a trigger 19 engages the sear tail 18' for rocking the sear in firing the arm.

In order to prevent the rocking of the sear when the magazine is removed, we have provided a suitable safety latch generally designated 20, and, in that form of our invention shown in the drawings, formed with a downwardly extending bearing pin 21 supported in a bearing lug 21' and surrounded by a compression spring 22. The upper end of the latch is slotted as at 23 to form fingers 24 the upper ends of which may cooperate with the downwardly extending sear tails 18' of the sear 15. The front faces 24' of said fingers 24 are inclined at an angle to the path of the latch so as to cause the latch 20 to wedge against the sear tails 18' of the sear 15 thereby forcing the upper end of said sear solidly against the stop surface of the hammer 10. This inclination of the faces 24' allows for considerable variation in the dimensions of the parts and provides a means for stopping the safety latch in its upward position. The fingers 24 may be formed with slots 25 for receiving the cross pin 26 which serve as a bearing for the upper end of the latch. In order to retract the latch from the sear when the magazine is in place we have provided a latch retracting lever 27 pivoted on a cross pin 28. Its forward end may extend into the magazine chamber while its other end extends into the slot 23 and bears upon the bottom of said slot. This lever is preferably provided with a stop shoulder 29 engageable with the magazine chamber wall 30 for limiting the downward movement of the lever 27.

The operation of the mechanism will be

obvious from the foregoing. When the magazine is in place as in Fig. 1 the safety mechanism is inoperative. However, when the magazine is removed the parts will be forced into the position shown in Fig. 2 with the fingers 24 blocking the sear against actuation with the result that the arm cannot be fired.

It will be seen that we have provided a construction which satisfies the objects enumerated above and one which constitutes a valuable advance in the art. While we have shown the invention in a certain physical embodiment it is to be understood that modifications of the structure shown may be made by those skilled in this art without departing from our invention as expressed in the following claims:—

1. In a firearm of the type having a removable magazine and firing mechanism comprising impact means, a sear engageable with said impact means for holding it in retracted position, and a safety device spring impelled to wedge said sear into engagement with said impact means, and means operable by the insertion of the magazine for withdrawing said latch and permitting operation of the firing mechanism.

2. In a firearm of the type having a removable magazine and a firing mechanism comprising a hammer and a sear engageable therewith, a slidable safety latch having an

inclined face engageable with said sear and spring-impelled into position to wedge the sear against the hammer, and means operable by the insertion of the magazine for withdrawing said latch and permitting operation of the firing mechanism.

3. In a firearm of the type having a removable magazine and a firing mechanism comprising a hammer and a sear engageable therewith, a slidable safety latch having an inclined face engageable with said sear and spring impelled into position to wedge the sear against the hammer, and means operable by the insertion of the magazine for withdrawing said latch and permitting operation of the firing mechanism, said means comprising a lever engageable at one end with said magazine and at the other end with said latch.

4. In a firearm of the type having sear controlled firing mechanism and a removable magazine, a slotted safety latch spring-impelled into position for locking the sear, and a lever co-acting with the slot, engageable by the magazine and operated thereby for withdrawing said latch and permitting operation of the firing mechanism.

In witness whereof we have hereunto set our names.

JOHN D. PEDERSEN.  
CRAWFORD C. LOOMIS.