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SAFETY MECHANISM FOR FIREARMS

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2 Sheets-Sheet 1

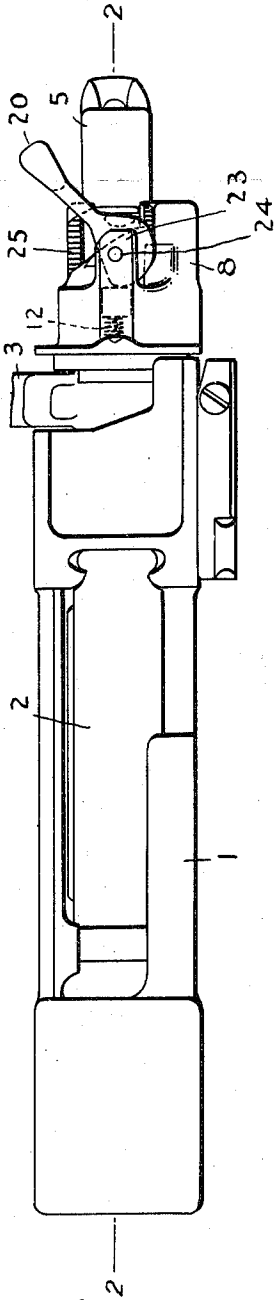


FIG. 1.

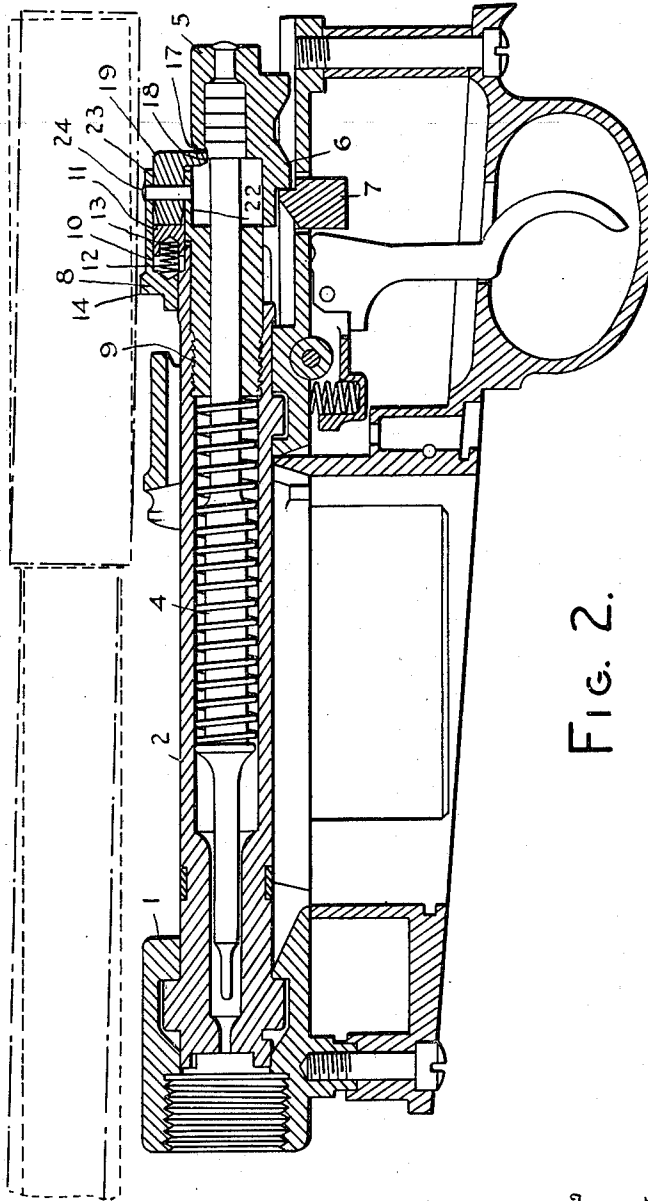


FIG. 2.

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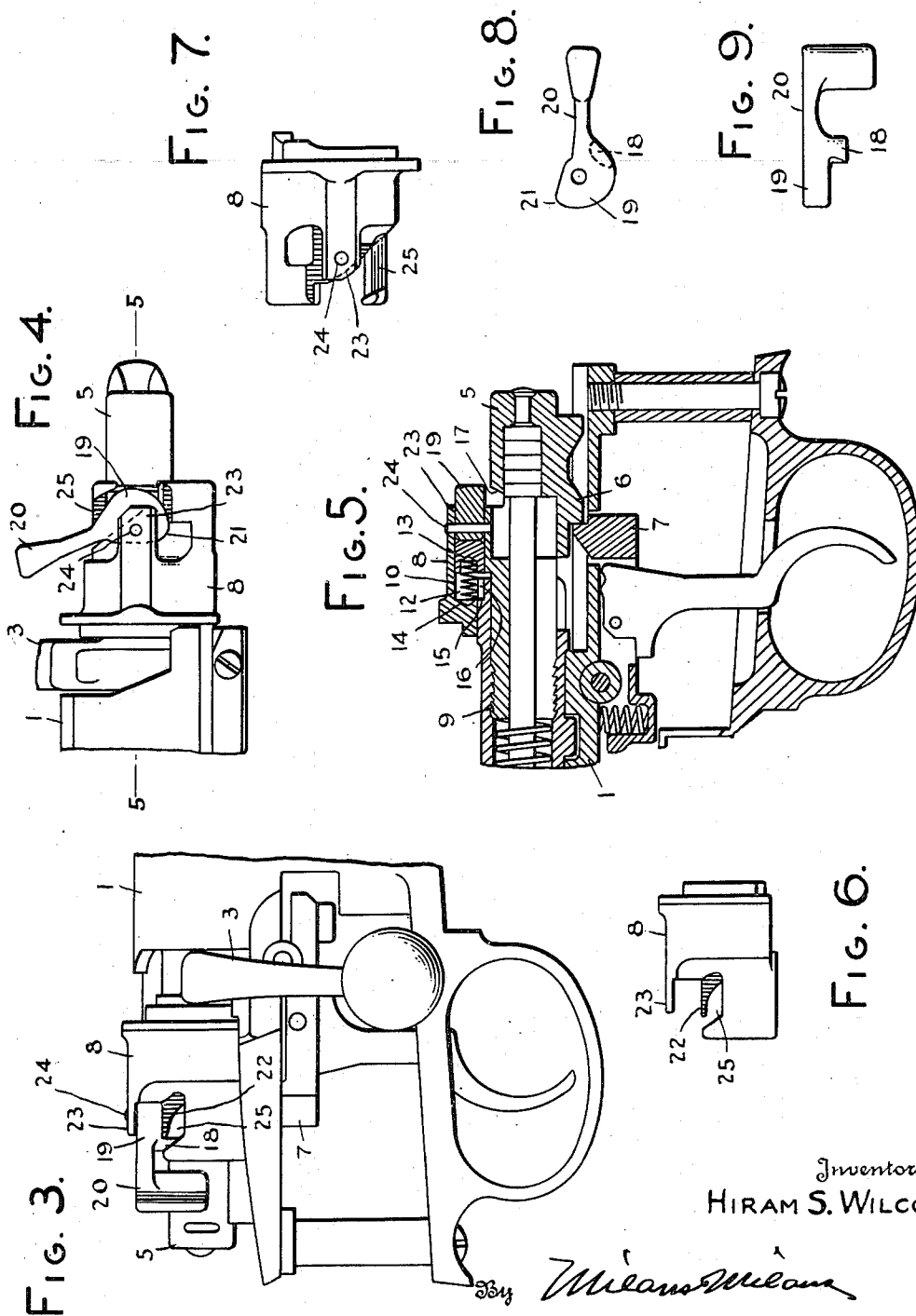
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SAFETY MECHANISM FOR FIREARMS

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SAFETY MECHANISM FOR FIREARMS

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14 Claims. (Cl. 42—70)

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This invention relates to improvements in firearms and more particularly to a safety mechanism for locking the firing pin and bolt of firearms of the Mauser type having an oscillating and reciprocating bolt action.

In recent years telescopic gun sights have been used extensively and when mounted upon a Mauser firearm or the like, the telescope must be placed close to, and extend to the rear of the receiver to such an extent as to place the same over the safety mechanism for proper sighting and efficient service. With the present types of Mauser and similar firearms, to have telescopic sights operatively and satisfactorily incorporated, free and unobstructed operation of the safety mechanism is impossible due to the telescope being in the path of movement of the operating lever forming part of the safety mechanism.

Knowing the faults of the present types of safety mechanisms it is the primary object of the present invention to provide a safety mechanism which will operate under all conditions of use.

Another object of this invention being the provision of a safety mechanism for locking both the bolt and firing pin of a firearm, operable by a single lever swinging in a path unobstructed by a telescope mounted upon the receiver, as set forth above.

The specific nature of this invention, as well as other objects and advantages will be apparent from the following description of a preferred embodiment of this invention, and as shown in the accompanying drawings, in which—

Figure 1 is a plan view showing the receiver and bolt with the safety mechanism in set position.

Figure 2 is a vertical sectional view showing the safety mechanism positioned for locking both the firing pin and the bolt taken on line 2—2 of Figure 1.

Figure 3 is a side view showing the safety mechanism in set position.

Figure 4 is a top plan view showing the safety mechanism in off position.

Figure 5 is a vertical sectional view showing the safety mechanism in off position taken on line 5—5 of Figure 4.

Figure 6 is a side view of the bolt head or coupling between the bolt and the firing pin.

Figure 7 is a plan view of said bolt head.

Figure 8 is a plan view of the safety lever.

Figure 9 is a side view of the safety lever.

Referring to the drawings 1 indicates the receiver in which the bolt 2 oscillates and reciprocates when operated by the lever 3. Within the bolt is the usual firing pin 4, having at one end

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a head 5 provided with the sear-engaging lug 6, the sear being shown at 7. Located at one end of the bolt is the head 8, which is provided at its center with an extension having an external thread 9 for engagement with a like thread of the bolt. This extension acts as a coupling to retain the firing pin and spring within the bolt as a unit, permitting the bolt to oscillate and the firing pin to reciprocate.

Lug 6 of the head 5 rides in a guide groove in the receiver which prevents the firing pin from rotating and as the rear part of the bolt head partly surrounds and is held against rotation relative to the firing pin, said bolt head is held from rotating.

All of the details so far described are old and of well-known construction and need no further description.

As stated, this invention relates specifically to improvements in safety mechanisms for firearms, mounted within and supported by the bolt head.

Referring to Figures 2 and 5 the head 8 is shown as being provided with a longitudinal bore 10 for receiving a sliding lock pin 11, the said pin being held in an inactive position by means of a coiled spring 12, seated in a recess 13 in the pin and a recess 14 in the head 8 at the base of the bore. It will be noted that the lower part of the wall of the bore 10 is provided with an opening 15 which registers with a recess 16 in the bolt, when the bolt is in normal position after the firing pin has been cocked. On advancing the lock pin against the tension of the coiled spring it enters the recess 16 of the bolt and locks the same against oscillation in the head 8. Due to the fact that the head is mounted in the receiver for sliding movement only, the bolt is effectively locked and no vertical movement can be imparted to the lever 3.

As is usual in firearms of this type, the firing pin head 5 provides a shoulder 17 to be engaged, in this instance, by a lug 18 carried by the head 19, of the safety operating lever 20. This head 19 is of a shape to provide a cam 21, operable to engage the sliding locking pin 11 to move the same in the bore against the tension of the coiled spring. The lever 20 is pivotally mounted between a shelf 22, forming a part of the head 8 and a rearwardly projecting head extension 23 by means of a pivot pin 24 fitting aligned openings in the shelf, extension and lever. In order that the lever 20 may be mounted in the head 8 for horizontal swinging movement forwardly and backwardly, and the lug 18 may be placed in front of the shoulder 17 when the firing pin is

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cocked, an entrance opening 25 is provided in the side of the head 8.

On reviewing the above description in connection with the drawings, it will be readily appreciated that this invention has marked advantages over the known constructions, in simplicity of application and operation, and that a firearm having this invention incorporated therein is well adapted to receive a telescopic gun sight for the reason that full and unobstructed operations of the safety lever are permitted in any adjustment of the sight. It is recognized that best results can be obtained from telescopes when they are mounted close down on the receiver and extending to the rear of said receiver. This, however, places the telescope over the present well-known type of safety mechanisms and in the path of the operating lever. By the present invention any interference with the operation of the safety mechanism, by the telescope, is prevented and the most desirable positions of the telescope, as stated, obtained.

While in the foregoing specification reference has been made to the Mauser type of firearm it is to be understood that this is simply for the purpose of imparting a clear understanding of the construction and operation of the invention of the safety device, while having it understood that the safety mechanism is adapted for employment in other recognized types of firearms, such as standard types of army Springfield and Winchester rifles in which the safety device may be similarly incorporated.

From the foregoing description, it is believed that the construction and operation, as well as the advantages of the present invention, will be readily understood and appreciated by those skilled in the art and that minor changes in these details of construction, illustrated and described, may be resorted to as falling within the spirit and scope of the invention as claimed.

I claim:

1. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and head and having an enlarged end, the combination therewith of safety mechanism for locking said firing pin, said safety mechanism comprising a lever mounted in said head on a vertical pivot for horizontal swinging movement, and means carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

2. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a lever mounted in said head on a vertical pivot for horizontal swinging movement, means in said head operated by said lever for locking the bolt, and means carried by said lever engaging the enlarged end of a firing pin to lock the latter when in cocked position.

3. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and head and having an enlarged end, the combination therewith of safety mechanism for locking said firing pin, said safety mechanism comprising a lever mounted in said head on a vertical pivot for horizontal swinging movement, and a lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

4. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and

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head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a cam lever mounted in said head on a vertical pivot for horizontal swinging movement, means in said head operated by the cam on said lever for locking the bolt, and means carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

5. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a cam lever mounted in said head on a vertical pivot for horizontal swinging movement, means in said head operated by the cam on said lever for locking the bolt, and a lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

6. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a lever mounted in said head on a vertical pivot for horizontal swinging movement, a sliding lock pin in said head operated by said lever for locking the bolt, and means carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

7. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and head and having an enlarged end, the combination therewith of safety mechanism for locking said firing pin, said safety mechanism comprising a lever mounted in said head on a vertical pivot for horizontal swinging movement, and a depending lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

8. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a cam lever mounted in said head on a vertical pivot for horizontal swinging movement, a sliding lock pin in said head operated by the cam on said lever for locking the bolt, and means carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

9. In a firearm including a bolt having a head, a firing pin slidably mounted in said bolt and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a cam lever mounted in said head on a vertical pivot for horizontal swinging movement, means in said head operated by the cam on said lever for locking the bolt, and a depending lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

10. In a firearm including a bolt having a body provided with a recess therein and a head, a firing pin slidably mounted in said bolt body and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a lever mounted in said head on a vertical pivot for horizontal swinging movement, a sliding lock pin in said head adapted to enter

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in said body recess operated by said lever for locking the bolt, and a lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

11. In a firearm including a bolt having a body provided with a recess therein and a head, a firing pin slidably mounted in said bolt body and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a lever mounted in said head on a vertical pivot for horizontal swinging movement, a sliding lock pin in said head adapted to enter in said body recess operated by said lever for locking the bolt, and a depending lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

12. In a firearm including a bolt having a body provided with a recess therein and a head, a firing pin slidably mounted in said bolt body and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a cam lever mounted in said head on a vertical pivot for horizontal swinging movement, a sliding lock pin in said head adapted to enter in said recess operated by the cam on said lever for locking the bolt, and a lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

13. In a firearm including a bolt having a body provided with a recess therein and a head, a firing pin slidably mounted in said bolt body and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism

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comprising a cam lever mounted in said head on a vertical pivot for horizontal swinging movement, a sliding lock pin in said head adapted to enter in said recess operated by the cam on said lever for locking the bolt, and a depending lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

14. In a firearm including a bolt having a body provided with a recess therein and a head, a firing pin slidably mounted in said bolt body and head and having an enlarged end, the combination therewith of safety mechanism for locking said bolt and firing pin, said safety mechanism comprising a lever, enlarged at one end to form a cam, mounted in said head on a vertical pivot for horizontal swinging movement, a sliding lock pin in said head adapted to enter in said recess operated by the cam on said lever for locking the bolt, spring means for returning the lock pin to normal position when released by said lever, and a depending lug carried by said lever engaging the enlarged end of the firing pin to lock the latter when in cocked position.

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