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KEY OPERATED SAFETY LOCK DEVICE FOR FIREARMS

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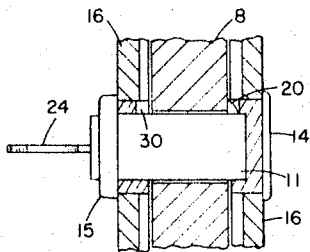
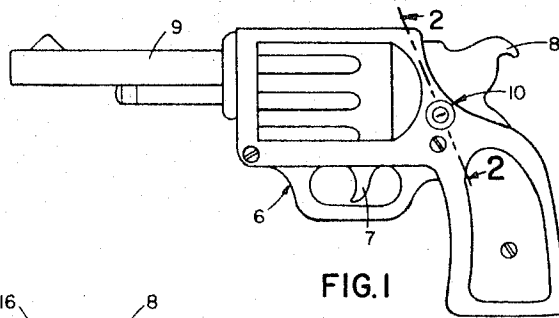


FIG. 3

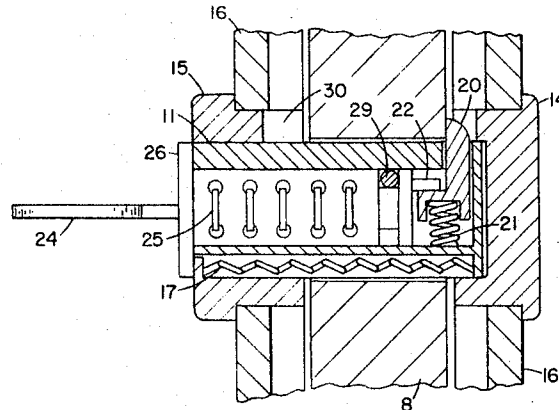


FIG. 2

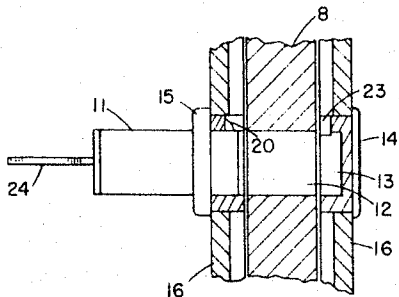
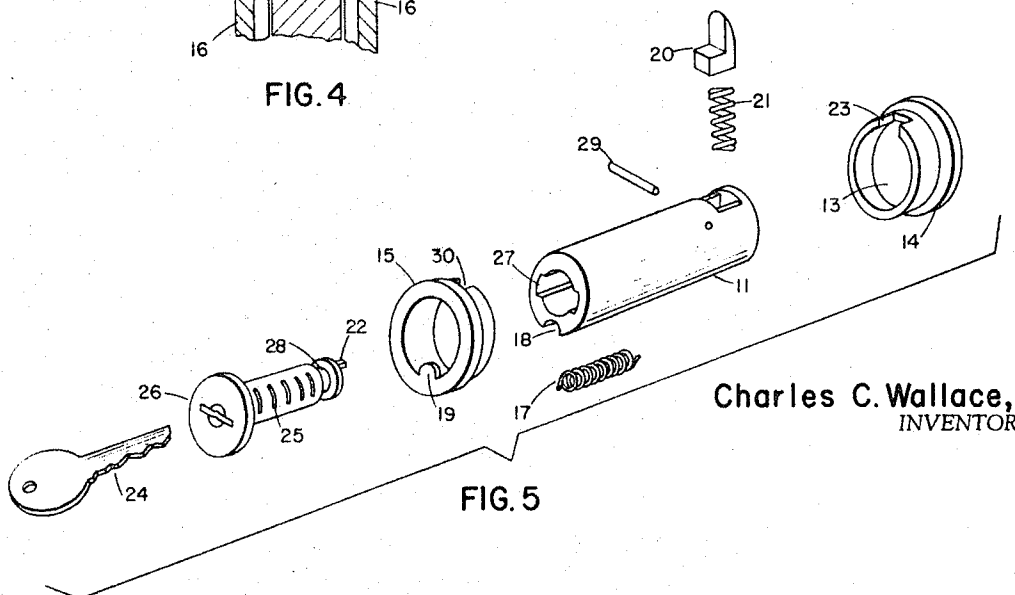


FIG. 4



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KEY OPERATED SAFETY LOCK DEVICE FOR FIREARMS

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1 Claim

ABSTRACT OF THE DISCLOSURE

A firearm including a hammer and key-operated safety lock wherein the hammer of the firearm can only be operated when a key is inserted in the lock and the key operated.

Safety locks for firearms of the type anyone can operate are various and many, but do not provide for adequate control of the hazards encountered with a firearm. Some methods of securing a firearm from discharging have been attempted by restricting the gun's use to the owner of a personalized key, but the majority of these devices thus far have proven impractical or undesirable.

The principal objects of this invention are to provide a desirable and reliable safety lock for applicable firearms.

Further objects of this invention are embodied in its arrangement and the function of its parts, which provide advantages in cost, adaptability, reliability, quick locking and to control who may use the firearm by having the lock's release activated with a personalized key. The objectives of this inventive concept will become more apparent after reviewing the following description and the accompanying drawings.

In the drawings:

FIG. 1 depicts a side elevational view showing the location of the invention on a conventional type of firearm.

FIG. 2 is an enlarged cross-sectional view from FIG. 1 taken along the lines 2—2 showing the assembly of parts in a locked position.

FIG. 3 is a cut-away view representing the locked position of the invention.

FIG. 4 is a cut-away view representing the unlocked position of the invention.

FIG. 5 is an exploded view of parts for identification and sequence purposes.

From FIG. 1, having reference now of a typical revolver 6 with conventional parts such as a trigger 7, hammer 8, barrel 9, and other normal features, the invention 10 is viewed with an outward appearance of a key entrance. Also seen in this view is the location of the invention being applied to counteract the hammer's movement, which is described hereinafter.

Viewing FIGS. 2 and 3, one may see the assembly of the instant invention in a locked state, with the hammer 8 being trapped by the lock cylinder housing 11. The latter is passed through a prepared opening 12 in the hammer 8 by means of pushing or pressing into this position. One end of the cylinder 11 is resting in the hollow 13 of the end plug 14 and is supported at the opposite end by the guidestop 15. The end plug 14 and guidestop 15 parts are mounted to the structural sides 16 of the firearm by means of brazing or pressfitting them in place. A tension spring 17, located in groove 18 of lock cylinder housing 11, is attached, by suitable means, between one end of the cylinder and the guide-stop part's tab 19. Said tab also maintains alignment for the assembly of the invention. The tension spring 17 attempts to remove the lock cylinder housing from said hammer's passage but is halted from doing so by retaining latch 20. Retaining latch 20 as viewed in FIG. 2 is being pushed from lock cylinder housing by compression spring 21 and held from exiting by eccentric block 22. Retaining latch is guided by slide surfaces in housing so as to limit latch to an inward and outward direction. The exposed part of retaining latch 20 is so shaped, where one side is flat for locking purposes and the other side is beveled. When the assembly is being pushed inward to be locked the beveled surface allows the latch to be forced into the housing, thus permitting inward travel of the assembly to the prepared stopping point. The tension spring 17 pulls retaining latch against side of hammer's structure. In this position the exposed part of latch resides in the notch 23 of the end plug.

The above mentioned relative position of parts constitutes a situation where said hammer is rigidly held and prevented from supplying the necessary force required to cause the firing pin to contact the explosive cap of the projectile. This situation also, of course, causes hammer to provide a blockage against some other force acting on the firing pin.

In order to release the locking mechanism from halting hammer's normal operation, it becomes necessary to insert a conventionally individualized key 24 into invention's assembly and turning to operate a common set of lock tumblers 25. This allows internal rotation of tumbler's body 26 which is mated with lock cylinder's housing 11. This mating involves the conventional radial slots 27 in the housing to provide for the tumblers 25 a non-rotation position, when the key is not engaged. The tumbler body 26 is kept within and allowed to rotate in lock cylinder housing 11 by means of a common groove 28 and roll pin 29 method. The rotation of tumbler body 26 thus rotates eccentric block 22, which is an integral part of the tumbler body. The eccentric block 22 moves against retaining latch, because of its eccentricity, thus compressing compression spring 21 until retaining latch 20 is within the lock cylinder's housing 11; thereby permitting the tension spring 17 to pull the lock cylinder housing out of hammer's passageway 12 to an out-of-the way position. The releasing of the key 24 allows the compression spring to force tumbler body by way of the eccentric block back to the initial position. This also causes retaining latch to protrude the housing as before, being halted by the eccentric block. The exposed part of latch now takes up position against and in notch 30 of the guide-stop. The tension spring still maintains some tension at this position thereby holding housing against guide stop. The complete removal of the lock cylinder housing from the firearm is prevented by the tab 19 of the guide-stop part. The aforementioned unlocked position is illustrated in FIG. 4.

The invention assembly 10 is not dependent upon the engagement of the key 24, to put the firearm into the state of being locked, which is done, as previously stated, by merely pressing the exposed part of the lock cylinder housing into the interior of the weapon until it is retained internally by stated means. It does become necessary for the key to be engaged with the tumblers to release the locking mechanism, but there is no mechanical reason why the key cannot be left engaged during the locking and unlocking process if desired.

It is understood that this inventive concept is representative of the invention's objectives and is not to be taken in the limiting sense. For example, when the invention is applied to various designs of handguns or shoulder firearms, it will become necessary to locate the invention in the most advantageous position in the partic-

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ular firearm. Also in some types of firearms, where applicable, it may be more desirable to apply the invention to retaining the trigger 7 from movement, thereby creating the same effect.

Having thus described the invention, the following is claimed as new and useful, upon which Letters Patent is desired:

1. A firearm including
 - a pivoted hammer having an opening therethrough, an end plug in the firearm on one side of said hammer having a notch in the upper part of said plug,
 - a guide stop in the firearm on the other side of said hammer having a tab on the lower part of said stop, and
 - a key-operated safety lock comprising a cylindrical housing having an opening in the top thereof and slidable between said end plug and said guide stop through the opening in said hammer,
 - a longitudinal groove in the outer surface of said housing,
 - a tension spring located in said groove and attached at one end to said housing and at the other end to said guide stop tab,

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- a retaining latch having a flat surface and an opposing beveled surface protruding through the opening in said housing and said notch in said end plug to engage said hammer,
- a compression spring exerting a force on said retaining latch, and
- a tumbler body in said housing, said body having an eccentric block for engaging said latch and in order to disengage it from said hammer.

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