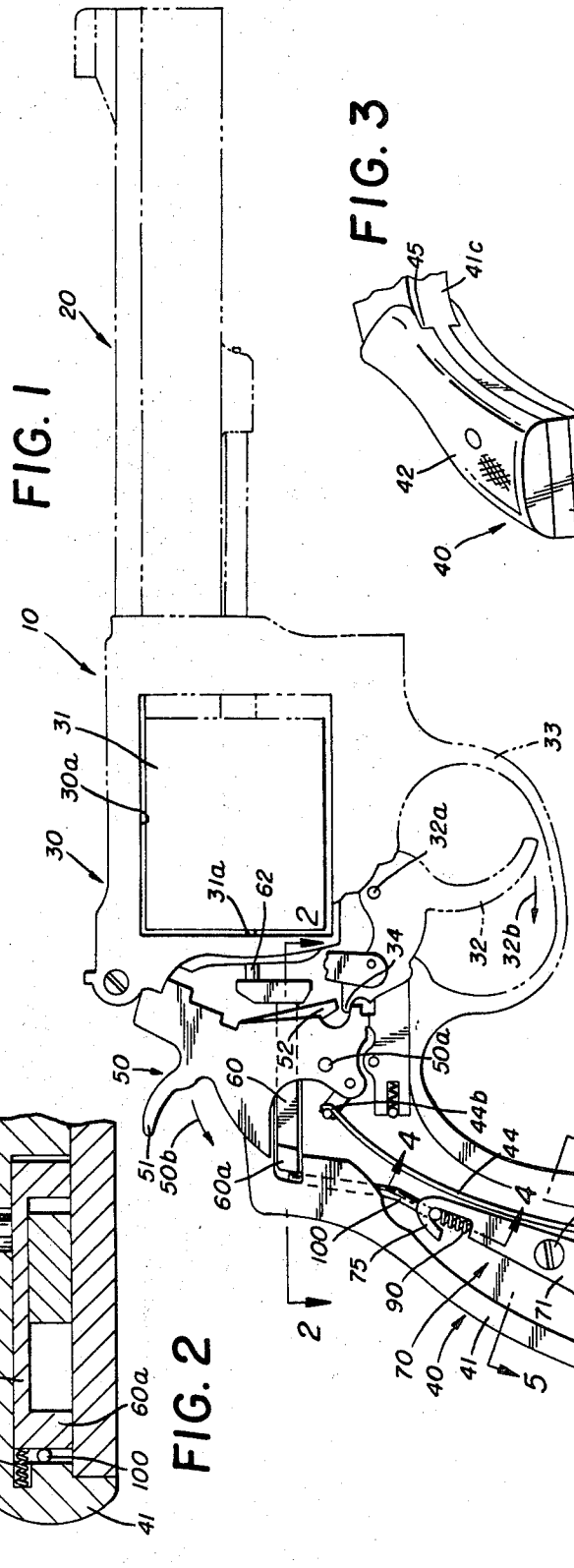
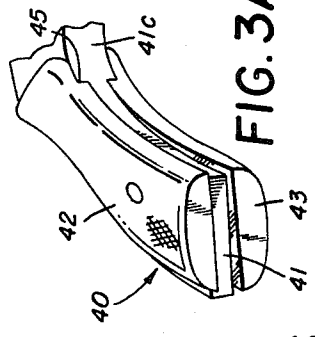
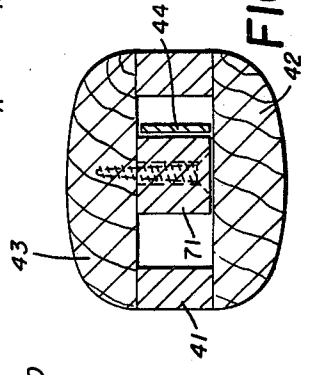
Jan. 21, 1969 D. S. WOLOCH 3,422,559

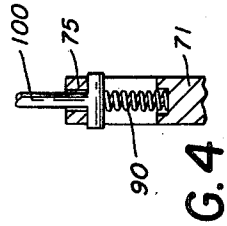
HANDGRIP OPERATED SAFETY MECHANISM FOR HANDGUNS

Filed June 13, 1967 Sheet 1 of 2









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HANDGRIP OPERATED SAFETY MECHANISM FOR HANDGUNS

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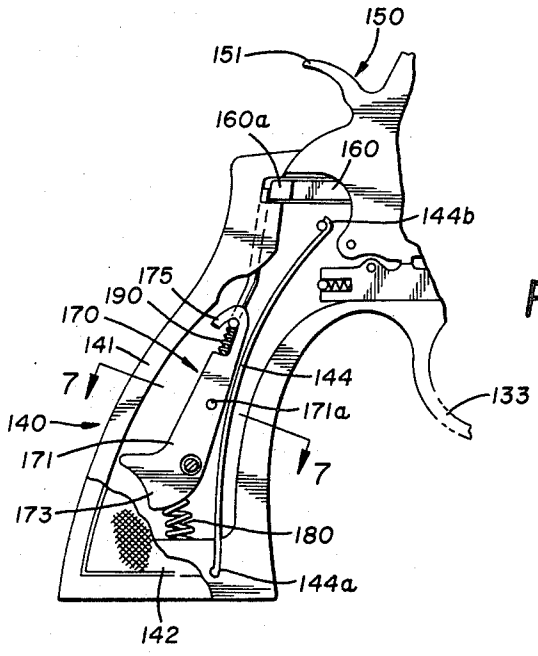


FIG. 6

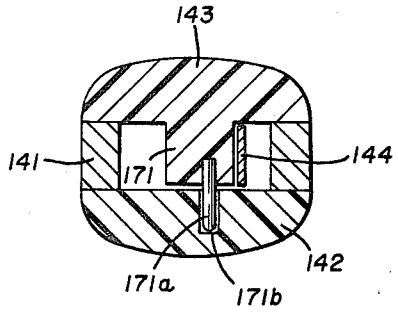


FIG. 7

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HANDGRIP OPERATED SAFETY MECHANISM FOR HANDGUNS

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ABSTRACT OF THE DISCLOSURE

A handgrip operated safety mechanism carried by the handgrip portion of a revolver, and including a spring-loaded stop member which is normally automatically urged into locking relationship with the hammer mechanism of the weapon upon loading to prevent normal functioning of the hammer. The safety mechanism and stop member are connected to the wooden portions of the handgrip and may be moved out of engagement with the slide by pivoting the wooden portions of the handgrip thereby permitting normal operation of the hammer and normal firing of the revolver.

Background of the invention

This invention relates to safety devices for revolvers and in particular relates to a safety device which can be set in the locked position either by means of a thumb slide or automatically upon opening and closing of the magazine cylinder. The safety device can only be unlocked by pivoting of the wooden portions of the handgrip about their point of support on the frame.

Description of the prior art

The following prior art is known to applicant: Bye U.S. patent, 795,816; Stone U.S. patent, 879,018; Donadio U.S. patent, 1,313,073; Twigg U.S. patent, 2,992,502.

The above prior art patents all disclose various types of handgun safety mechanisms. These safety mechanisms, however, are generally locked and unlocked by means of finger or thumb operated mechanisms. Thus the Donadio and Bye patents disclose safeties which are released by pushing externally located buttons while the device of the Stone patent is released by depressing a portion of the grip. The Twigg reference discloses a freely rolling bearing element which locks and unlocks the safety mechanism upon movement of the revolver from a vertical to a horizontal position.

It is believed that applicant's invention is a definite improvement over these devices since it is, first, structurally considerably simplified and, second, it is virtually impossible to accidentally unlock the safety.

Summary of the invention

In the art of handguns it is, of course, desirable to provide safety mechanisms which will prevent firing of the weapon either prematurely by the intended user or accidentally by persons lacking familiarity with revolvers such as children, for example. Handguns have long been provided with various types of safety mechanisms for this purpose. For example, the prior art references above noted all disclose the various mechanisms of this general type.

In the prior art, however, the locking and unlocking of the safeties have been accomplished by means which would be obvious to anyone observing the weapon. Consequently, these safeties have the disadvantage that persons unfamiliar with weapons such as for example, children, could easily unlock the same with the obviously dangerous results.

This is also a disadvantage to law enforcement officers who, on occasion have had their revolvers taken from their holsters in crowds and used against them. Safeties such as known in the prior art are ineffective in such a situation since no high degree of knowledge about weapons is necessary to enable such persons to release the safety.

It has been discovered therefore that, by incorporating the safety mechanism into the handgrip of the weapon and providing the same with a spring-loaded stop member, that the safety device can be automatically moved into the locking position with regard to the hammer upon loading of the weapon.

It has been further discovered that by securing the safety device to the wooden portions of the handgrip for movement in unison therewith that upon twisting of these wooden members, the safety device can be moved out of locking position.

Furthermore, it has been discovered that by provision of such a locking mechanism improved safety features are obtained since the means for unlocking the safety are not visible or apparent to the eye thereby obviating accidental unlocking.

Accordingly, production of a revolver safety mechanism having the foregoing characteristics becomes the principal object of this invention with other objects thereof becoming more apparent upon a reading of the following brief specification, considered and interpreted in the light of the accompanying drawings.

Of the drawings:

FIGURE 1 is a side elevational view of a revolver partially broken away showing the improved safety mechanism.

FIGURE 2 is a partial sectional view taken on the lines 2—2 of FIGURE 1.

FIGURE 3 is a partial perspective view showing the grip in its normal position.

FIGURE 3A is a partial perspective view showing the grip moved to unlocking position.

FIGURE 4 is a partial sectional view taken on the lines 4—4 of FIGURE 1.

FIGURE 5 is a sectional view taken on the lines 5—5 of FIGURE 1.

FIGURE 6 is a partial side elevational view showing the modified form of the improved safety mechanism.

FIGURE 7 is a partial sectional view similar to FIGURE 5 and showing the modified form of the invention shown in FIGURE 6.

Turning first then to FIGURE 1, it will be seen that the revolver, generally indicated by the numeral **10**, consists of a barrel **20**, body **30**, handgrip **40** and hammer mechanism **50**.

The barrel **20** projects from the forward end of the body **30** and is conventional in construction. The body **30** is also conventional in construction and includes a conventional revolving magazine cylinder **31** which can be snapped into and out of the appropriate opening **30***a* of the body **30** for loading purposes. This magazine cylinder also has a spring-loaded button **31***a* projecting from its rearward edge for purposes which will be described more fully below.

The body **30** also has the normal trigger **32** and trigger guard **33**, with trigger **32** being pivotally connected to the body as at **32***a* for movement in direction of arrow **32***b* for firing purposes as will also be described in greater detail below.

The handgrip portion **40** of the revolver **10** projects from the rear end of the body **30** and generally consists of a metal strap member **41** which has secured thereto a pair of opposed plates **42** and **43** which are generally of wood, but which, of course, can be constructed of any desired material.

Handgrip portion **40** also carries the main spring **44** with this spring being a flat piece of steel with its lower end **44***a* seated in the butt of the handgrip and its upper end **44***b* being linked to the hammer **50**.

The hammer **50** is of generally conventional construction and consists of thumb grip **51** as well as the normal firing pin (not shown). This hammer is pivotally secured to the body as at **50***a* for purposes which will be described below.

The body **30** also carries a cylinder release slide member **60** which is of generally U-shaped planar configuration as shown in FIGURE 2 and is normally urged to the right of FIGURE 1 by spring **61** which is seated in the forward edge of strap **41**. However, when the magazine cylinder **31** is closed, the spring-loaded button **31***a* thereof engages projection **62** of the slide **60** and overcomes the force of spring **61** so as to push the slide to the left of FIGURE 1.

All of the elements thus far described are substantially found in most revolvers and in this regard, operation of the revolver in the normal instance occurs as follows.

The trigger **32** is pulled by the finger of the user in the direction of arrow **32***b*. As the trigger is moved in this direction, projection **34** of the trigger engages shoulder **52** of the hammer, thereby pivoting the hammer in the direction of arrow **50***b*. Inasmuch as the slide **60** is normally forced rearwardly or to the left of FIGURE 1, when the magazine **31** is closed, the hammer **50** is permitted to rotate about point **50***a* until such time as trigger **32** has been rotated far enough so that its projection **34** clears shoulder **52** of the hammer. At that time, the force of the main spring **44** will violently urge the hammer in the reverse direction causing the firing pin to fall upon the cartridge and firing the weapon.

In the form of handgun shown in the drawings, when the magazine cylinder **31** is moved out of its cavity **30***a* for loading purposes, the spring **61** will be free to urge slide **60** to the position shown in FIGURE 1. At this time, of course, it would not be possible to fire the weapon due to the fact that movement of the hammer **50** in the direction of arrow **50***b* would be prohibited by leg **60***a* of the slide. When the revolver is closed, however, spring-loaded button **31***a* of the magazine cylinder normally forces the slide to the left so that leg **60***a* is clear of the hammer and the weapon can then be fired. In order to prevent this, safety means **70** are provided.

The safety means **70** generally consist of a rocker element **71** which is secured to plate **43** of the handgrip by means of screw **72** for movement in unison therewith. It should be understood here that plate **42** normally covers the exposed side of the handgrip **40** and is secured to plate **43** and rocker arm **71** by means of a screw so that both plates **42** and **43** will move in unison. Plate **42** has been broken away in the drawings for convenience of illustration.

Safety mechanism **70** also includes a spring **80** which is seated in the base of the middle portion of the handgrip **40** and also has its opposed end seated in recess **74** in the bottom end **73** of the arm **71**.

The opposed end **75** of arm **71** has yoke-like configuration and also carries a coil spring **90** seated therein. A T-shaped stop member **100** seats in the yoke formed by the end **75** of arm **71** and is normally urged upwardly by spring **90** as shown in FIGURE 1. This stop member **100** is normally urged therefore toward the position of FIGURE 1 where it is between slide **60** and the rear wall of the weapon formed by strap **41** thereby preventing the slide **60** from moving all the way to the left of FIGURE 1.

Due to the fact that stop member **100** is constantly urged in this direction (to the right of FIGURE 1), whenever the magazine cylinder **30** is opened and the slide **60** is forced to the right by spring **61**, the stop member **100** will autocatically snap into place so that even when the magazine cylinder is returned to the cavity **30***a*, the slide **60** cannot return to its open position, and of course, the hammer **50** cannot function.

It should also be noted here that thumb button **110** is connected to slide **60** and is normally referred to as the cylinder release catch. In this regard, slide **60** is moved to the right by pressure on button **110** to overcome the force on button **31***a* and permit magazine cylinder **31** to be opened. However, this mechanism can also be used to engage safety **70** by moving button **110** and slide **60** to the right only far enough to permit spring **90** to snap locking member **100** into place.

At this point it is important to note that a very secure lock is obtained since hammer **50** is normally urged down onto slide **60** if an attempt is made to fire the weapon. It has been found that pressure can be applied until either the hammer **50** or trigger **32** break without achieving discharge of the weapon.

When it is desired to release the safety **70** and referring to FIGURES 1, 3 and 3A, it is merely necessary to grasp the handgrip in the normal firing position with the hand engaging plates **42** and **43**. At this time, if the wrist of the user is merely snapped forward and down, the weight of the gun will cause a relative pivoting movement between the plates **42** and **43** and the metal portion of the handgrip **41** (see FIGURE 3A). This pivoting occurs about point **45** which is the point of juncture of the plate **42** with the shoulder **41***c* of strap **41**. This pivoting will pull arm **71** downward against the force of the spring **80** and will, of course, also pull stop member **100** from behind slide **60** so that the normal operation of push button **31***a* of the cylinder will move slide **60** to the left and clear of the hammer **50**. Release of hand pressure then permits spring **80** to return the plates to their normal position and the trigger **32** may then be pulled in normal fashion and the weapon will fire as intended.

In order to facilitate movement of plates **42** and **43** a short elongate slot **41***a* has been cut in the plates so that the same may move relatively of locating pin **41***b*.

It has been shown, therefore, how, by providing a grip actuated safety mechanism that an improved safety device can be provided with it being apparent that accidental release of the safety will be, for all practical purposes, obviated for two reasons.

First, the manner by which the safety can be released is not, in any way, visibly apparent to the person handling the weapon.

Second, the weapon must be gripped in a precise manner in order to enable the device to be unlocked. In this regard, it has been found that a certain amount of practice is necessary even after the user is apprised of the method of operation of the weapon.

Furthermore, and in contrast to existing safeties it is possible to release the safety while the weapon is in its holster by hand pressure to the informed user but virtually impossible to accidentally release when being withdrawn from the holster.

It should also be noted here that the safety mechanism **70** can either be incorporated into a revolver at its point of manufacture or can easily be placed in an existing weapon with little or no modification being required. It also could be made integral with one of the plates **42** or **43** if desired.

Thus, as shown in FIGURES 6 and 7, the rocker element **171** is made integral with plate **143** and the pin **171***a* is received in a recess **171***b* in plate **142** so that upon movement of the plates as described above, the safety device will be actuated.

While a full and complete description of the invention has been set forth in accordance with the dictates of the Patent Statutes, it should be understood that modifications may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. In combination with a revolver having a handgrip and a hammer mechanism the improvement comprising a pair of opposed plates movably mounted on said handgrip and spring-loaded safety means secured to said plates for movement in unison therewith and being normally urged into locking engagement with said hammer mechanism; said safety means adapted to be moved out of locking engagement with said hammer mechanism upon movement of said plates relatively of said handgrip.

2. A safety mechanism for use on a revolver having a handgrip, a cylinder, and cylinder slide release of the character described, comprising:

(A) spring-loaded safety means
  (1) carried in said handgrip of said revolver and adapted to be normally urged into locking engagement with the cylinder slide release of said revolver,
    (a) whereby operation of the hammer of said revolver will be prevented; and

(B) means carried by said handgrip for releasing said safety means.

3. The device of claim 2 further characterized by the fact that said safety means include

(A) a first spring seated in the base of said handgrip;

(B) an elongate arm member having one end secured to said first spring;

(C) a second spring projecting from the opposed end of said arm member;

(D) a stop member
  (1) carried by said arm and
  (2) being normally urged upwardly by said second spring; and

(E) said handgrip including a pair of opposed plates movably mounted thereon;

(F) said arm being secured to said plates for movement in unison therewith.

4. The device of claim 2 further characterized by the fact that said safety means and said means for releasing said safety means are of one piece construction.

5. The device of claim 2 further characterized by the fact that said means for releasing said safety means include

(A) a pair of opposed plates
  (1) carried by said handgrip portion for movement in unison relatively thereof and
  (2) secured to said safety means.

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