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TRIGGER SAFETY DEVICE

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ENGLISH-ABST:

An attachable combination trigger safety device having combination locks, a lock lever and a pressure point release. The device is inserted in a gun trigger housing to prevent accidental gun firing. A press pin engages a cam that rotates with the lock lever so that the lock lever cannot release the gun trigger. The combination locks prevent the press pin from disengaging the cam. The combination locks must be opened so that the press pin can be held disengaged from the cam, and so that the user can rotate the lock lever to an open position.

NO-OF-CLAIMS: 14

NO-DRWNG-PP: 4

PARENT-PAT-INFO:

PRIORITY

[0001] Priority is hereby claimed to provisional patent application No. 60/521412 filed on Apr. 21, 2004.

SUMMARY:**FIELD OF THE INVENTION**

[0002] The present invention relates to a gun trigger safety device, more particularly a combination trigger safety device comprising of two combination locks, a lock lever, and pressure point release for semi-automatic pistols, revolvers, and rifles.

BACKGROUND OF THE INVENTION

[0003] In the United States there is a great debate over gun control. Parties involved in this debate do not consent on who should be permitted to own guns or under what conditions should people be permitted to own guns. A prime reason for this is because in the past many children have suffered gun injuries or fatalities after finding loaded guns in homes. Authorities from both sides of the debate agree that when keeping a gun in a house, an owner should lock the gun in a secure manner.

[0004] Assortments of gunlock devices have been introduced to the market, although many are not adequate. Some of these devices consist of separate pieces that are placed on either side of a gun trigger. These pieces then are locked together into a fixed position, with the use of a locking bar and key. Yet, unlike the present invention these devices propose a disadvantage due to the fact that if one part is lost the device can no longer be utilized and must be replaced entirely. Also, in the case of an emergency requiring the employment of the gun, a user will not be able to use the gun if he or she has lost a critical safety piece.

[0005] PCT Publication No. WO 03/031300A1 published on Apr. 17, 2003, by Smith for a gun safety lock device shows a device that wraps around a barrel of a weapon. Unlike the present invention, Smith's device is not small and portable.

[0006] U.S. patent Publication No. US 2003/0066228A1 published on Apr. 10, 2003, by Smith for a gun safety lock device shows the same or similar invention as PCT Publication WO 03/031300A1. Again, unlike the present invention, Smith's device is not small and portable.

[0007] U.S. patent Publication No. US 2001/0011432A1 published Aug. 9, 2001, by Schnell for a removable trigger guard for firearms shows first guard member and a second guard member permanently connected by a linking member, with a fixedly sized gap therebetween. Schnell's device is unlike the present invention in that it does not provide a rotating arm or lever in combination with a cam for engaging a trigger of a firearm.

[0008] U.S. Pat. No. 6,389,727B2 issued on May 21, 2002, to Schnell for a removable trigger lock for firearms shows the same or similar invention as U.S. patent Publication No. US 2001/0011432A1. Again, unlike the present invention, Schnell's device does not provide a rotating arm or lever in combination with a cam for engaging a trigger of a firearm.

[0009] U.S. Pat. No. 6,205,695B1 issued on Mar. 27, 2001, to Schnell for a removable trigger lock for firearms shows the same or similar invention as U.S. patent Publication No. US 2001/0011432A1 and U.S. Pat. No. 6,389,727B2. Again, unlike the present invention, Schnell's device does not provide a rotating arm or lever in

combination with a cam for engaging a trigger of a firearm.

[0010] U.S. Pat. No. 5,535,605 issued on Jul. 16, 1996, to Werner shows a gun lock having two cantilevered screws and a casing with a chamber having a lock subassembly with a generally U-shaped frame member for locking the two screws and adjusting the space between the backup member and the casing. Unlike the present invention, Werner's device does not provide a rotating arm or lever in combination with a cam for engaging a trigger of a firearm.

[0011] U.S. Pat. No. 5,271,174 issued on Dec. 21, 1993, to Bentley shows a combination wall mount/portable gun lock assembly that actually extends into the chamber of the gun, unlike the present invention.

[0012] U.S. Pat. No. 4,084,341 issued on Apr. 18, 1978, to Cervantes shows a detachable gun lock having a device that completely fits over a gun from top to bottom of the gun, unlike the present invention. Unlike the present invention, Cervantes' device is not small and portable.

[0013] European Patent No. EP 0740122B1 issued on Feb. 11, 2000, to Klein et al. shows a lock for blocking the trigger of a firearm having two lock portions held by engagement of teeth, unlike the present invention.

[0014] Thus there is the need for a device that locks and secures a gun trigger, can easily be installed and quickly released, utilized in an array of gun trigger houses, and has few separate pieces.

SUMMARY OF THE INVENTION

[0015] The present invention is a trigger safety device having a pair of combination knob locks, a lock lever and a pressure point release for semi-automatic pistols, revolvers and rifles. Before inserting the present invention within a gun trigger housing, the combination locks are set to an open position and the lock lever is pulled downward. Once this procedure has been completed, the present invention is slid into the trigger housing such that the present invention's ends push against opposing ends of the trigger housing. The lock lever is pushed clockwise until a snap sound is heard, signaling the gun trigger is in a secured locked position.

[0016] Components of the present invention render the device to be conveniently attached and detached from a trigger housing, as well as permit the gun to be safe from accidental firing, children, and adults who are not owners of the gun.

[0017] Other advantages will become evident in the following detailed description and complementary drawings.

DRWDESC:

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is an environmental perspective view of the present invention shown detached from a handgun.

[0019] FIG. 2 is a side view of the present invention shown attached to a handgun in an open position.

[0020] FIG. 3 is a side view of the present invention shown attached to a handgun in a locked position.

[0021] FIG. 4 is a side view of the present invention shown attached to a handgun in an override position.

[0022] FIG. 5 is a side internal view of the present invention shown attached to a handgun in an open position.

[0023] FIG. 6 is a side internal view of the present invention shown attached to a handgun in a locked position.

[0024] FIG. 7 is a side internal view of the present invention shown attached to a handgun in an override position.

DETDESC:

DETAILED DESCRIPTION

[0025] The present invention is a combination trigger safety device constructed to be operated in combination with a handgun as displayed in FIGS. 2-7, as well as semi automatic pistols, revolvers, and rifles.

[0026] The present invention has three main goals that it achieves: first, the present invention needs to attach to the gun trigger simply and easily, and then be secured thereto; second, the present invention must have a way of locking, so that once secured to the gun trigger, the present invention cannot be removed unless safeguards are overridden; and third, the present invention has multiple safeguards to prevent its removal from the gun trigger prematurely. So long as the present invention is secured, it sits between the gun trigger and the gun trigger housing to prevent the movement of the gun trigger backwards. Incapable of moving backwards, the gun trigger cannot cause the gun to discharge.

[0027] The combination trigger safety device has a first combination lock 10, a second combination lock 20, a lock lever 30, and a pressure point release 40. These parts of the present invention are integral to its proper functioning.

[0028] FIG. 1 should be employed to understand the present invention's shape and how the present invention's shape allows it to fit around a gun trigger 1. The present invention has a first grooved end 2 and a second grooved end 4 that fit onto trigger housing 6. To fit the present invention onto trigger housing 6, the user places the first grooved end 2 of the present invention adjacent to the trigger housing 6, allowing the trigger housing 6 to fit within the first grooved end 2 of the present invention. Then, the user moves the second grooved end 4 against the trigger housing 6 such that the trigger housing 6 is held within the second grooved end 4. Note that second grooved end 4 has a lower wall 8 to allow gun trigger 1 to slide in and out of second grooved end 4.

[0029] The present invention is shown in FIG. 2 attached to trigger housing 6. Gun trigger 1 fits into groove housing 50. Lock lever 30 can rotate to cover gun trigger 1 to snugly hold the gun trigger 1 in place within the present invention. When the lock lever 30 is rotated to cover gun trigger 1, the lock lever 30 rests against the gun trigger 1 to hold gun trigger 1 tightly in groove housing 50. Thus, the lock lever 30 insures that the gun trigger 1 is immobilized.

[0030] As will be explained in detail later, lock lever 30 has controlled rotation, such that it cannot be rotated counterclockwise unless pressure point release 40 is being pressed. Further, as will be explained later, lock lever 30 will not rotate counterclockwise if first combination lock 10 and second combination lock 20 have not been opened--even if pressure point release 40 is being pressed. As shown in FIGS. 3 and 4, first combination lock 10 and second combination lock 20 are partially visible emanating from the far side of the present invention, that is, the side of the present invention opposite of the groove housing 50 and lock lever 30.

[0031] To attach the present invention to a gun trigger, the first combination lock 10 and second combination lock 20 must be set in an open position. To appreciate why this is necessary, attention should be paid to FIGS. 5, 6, and 7. A press pin 100 is disposed in the present invention in a horizontal plane, and press pin 100 is in communication with cam 110. Lock lever 30 is in fixed communication with cam 110 so that when lock lever 30 rotates, so does cam 110.

[0032] FIGS. 5, 6, and 7 show the three positions to which lock lever 30 rotates, and the corresponding cam 110 position in relation to press pin 100 for each of the three positions. To place the present invention on gun trigger 1, lock lever 30 must be in the open position so that gun trigger 1 can be fit into groove housing 50. When the lock lever 30 is in the open position, it is disposed in a downward direction, and cam 110 presses press pin 100 against spring 120.

[0033] Once gun trigger 1 has been fitted into groove housing 50, the user moves lock lever 30 to the locked

position so that gun trigger 1 is sandwiched between groove housing 50 and lock lever 30. When the lock lever 30 is in the locked position, it is disposed in a slightly downward direction from the horizontal plane, and cam 110 receives press pin 100 in flat 130. In this locked position, lock lever 30 cannot be rotated back to the open position because flat 130 engages press pin 100 such that downward rotation of lock lever 30 is impossible until press pin 100 is removed from flat 130.

[0034] To remove press pin 100 from flat 130, the third position for lock lever 30 is required. The third position for lock lever 30 is the override position, and when lock lever 30 is in this position, it is disposed in a slightly upward direction from the horizontal plane, and cam 110 presses press pin 100 against spring 120. Once lock lever 30 is in the override position, clutch 132 is required. Clutch 132 has an aperture 133 through which press pin 100 passes. When clutch 132 is pressed from pressure point 40 at the outside of the present invention, clutch 132 pushes against press pin 100 in a direction perpendicular to the path of movement of press pin 100, and, via friction, prevents press pin 100 from moving in response to pressure from spring 120.

[0035] Thus, to move lock lever 30 from the locked position to the open position, lock lever 30 must be first moved to the override position. In the override position, clutch 132 is pressed against press pin 100 to hold press pin 100 disengaged from flat 130. While holding clutch 132 pressed against press pin 100, lock lever 30 is rotated to the open position. Thus, cam 110 will not receive press pin 100 because pressure from spring 120 is defeated by the user pressing clutch 132 against press pin 100. In other words, pressure on clutch 132 holds press pin 100 so that press pin 100 does not move, under pressure from spring 120, into flat 130. Once in the open position, lock lever 30 no longer sandwiches gun trigger 1 against groove housing 50, and the present invention can be removed from the trigger housing 6 so that gun trigger 1 can move to fire gun 3.

[0036] As aforementioned, lock lever 30 will not rotate counterclockwise if first combination lock 10 and second combination lock 20 have not been opened--even if pressure point release 40 is being pressed. As shown in FIGS. 5, first combination lock 10 does not communicate with first groove 200 of press pin 100 when lock lever 30 is in the open position. First groove 200 is merely a curved groove which goes around the circumference of press pin 100. Further, second combination lock 20 does not communicate with second groove 210 of cam 110 when lock lever 30 is in the open position. Second groove 210 is merely a curved groove which interrupts the circumference of cam 110. Thus, because first combination lock 10 and second combination lock 20 are set in their open position, not communicating with either press pin 100 or cam 110, lock lever 30 is free to rotate from the open position for lock lever 30 to the locked position for lock lever 30. In other words, to attach or remove the present invention to or from gun trigger 1, the first combination lock 10 and the second combination lock 20 must be set in their open positions.

[0037] Once lock lever 30 has been rotated to its locked position so that flat 130 engages press pin 100, first combination lock 10 and second combination lock 20 are rotated so that they do communicate with first groove 200 and second groove 210, respectively. When first combination lock 10 and second combination lock 20 are rotated so that they do communicate with first groove 200 and second groove 210, respectively, press pin 100 and cam 110 will not move. Thus, first combination lock 10 and second combination lock 20 must be rotated out of communication with first groove 200 and second groove 210, respectively, so that lock lever 30 can be rotated to the override position and then to its open position. In short, the user must know how to position first combination lock 10 and second combination lock 20 before moving lock lever 30 to the override position.

[0038] The present invention may be manufactured using materials such as Teflon, plastic, steel, or any machine ready material, to ensure the device is well built and sturdy.

[0039] Having illustrated the present invention, it should be understood that various adjustments and versions might be implemented without venturing away from the essence of the present invention. The present invention is not limited to the embodiments described above, and should be interpreted as any and all embodiments within the scope of the following claims.

ENGLISH-CLAIMS:

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1. A trigger safety device, comprising: a pressure pin; a cam, in communication with said pressure pin; a lock lever, in communication with said cam; and a trigger groove, in communication with said lock lever.
2. The device of claim 1, wherein said pressure pin is cylindrical.
3. The device of claim 1, wherein said cam is fixedly attached to said lock lever.
4. The device of claim 1, wherein said trigger groove is arranged with said lock lever to sandwich a trigger.
5. The device of claim 1, further comprising a first combination lock in communication with said pressure pin.
6. The device of claim 1, further comprising a second combination lock in communication with said cam.
7. The device of claim 1, wherein said pressure pin has a first groove.
8. The device of claim 7, wherein said first groove goes around the circumference of said pressure pin.
9. The device of claim 1, wherein said cam has a second groove.
10. The device of claim 9, wherein said second groove disturbs the circumference of said cam.
11. The device of claim 1, further comprising a flat at the point where said cam communicates with said pressure pin.
12. The device of claim 11, wherein said flat only moves against said pressure pin in one direction.
13. The device of claim 1, further comprising a clutch in communication with said pressure pin.
14. The device of claim 13, wherein said clutch communicates with said pressure pin to prevent said pressure pin from engaging said cam.

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