March 19, 1963 I. WEISS 3,081,998

TOY GUN

Filed Nov. 25, 1958

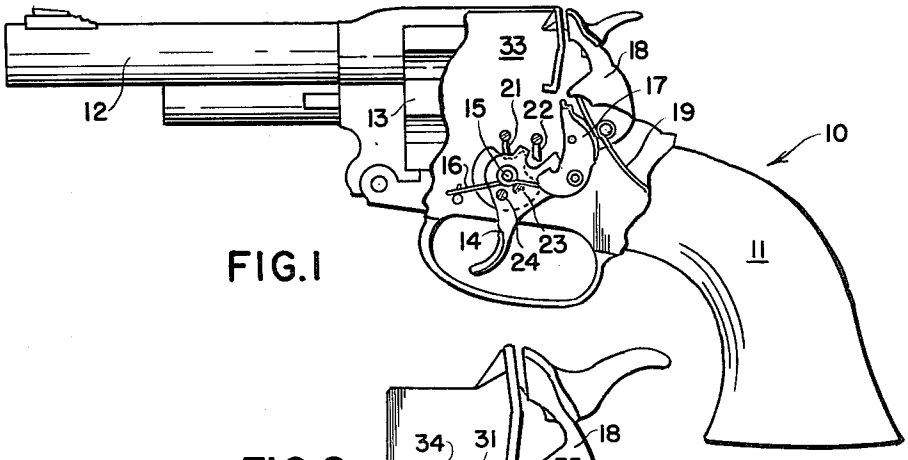


FIG.1

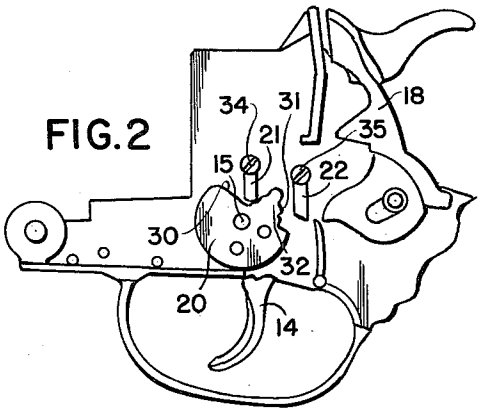


FIG.2

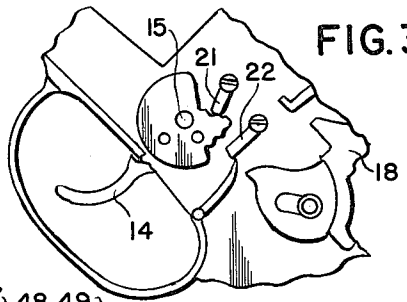
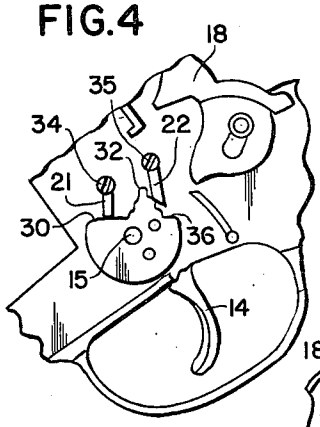


FIG.3

FIG.4



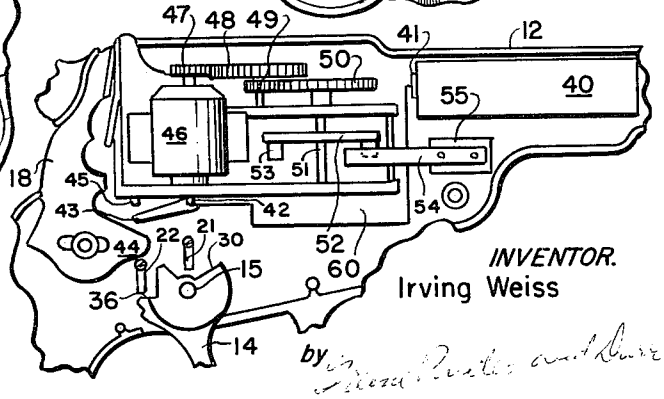


FIG.5

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TOY GUN

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4 Claims. (Cl. 273—1)

This invention relates to a toy or practice gun suitable for testing ones skill in drawing from a holster.

Among the objects of the invention is to provide a toy or practice gun which when drawn from the holster and leveled directly at a target will shoot properly but if triggered when pointing up or pointing down will jam or block.

The objects of the invention are obtained by providing jamming means on one of the pivoted mechanisms connected with the trigger which cooperate with one or more pivoted gravity controlled means that permit operation of the trigger mechanism when the gun is held level but jam or block the mechanism and prevent its complete operation when the gun is not held level.

The term gun in the present specification and claims, is used in its broad sense to include pistols, revolvers, rifles, howitzers, etc.

A very satisfactory type of gravity controlled means is a pendulum type device which interlocks with the pivoted means on the trigger mechanism in certain positions of the gun but not in the level position.

In the drawings:

FIG. 1 is a side view of the gun with the side portion thereof broken away to show the essential parts of the mechanism.

FIG. 2 is a view of the trigger mechanism with a portion of the trigger removed.

FIG. 3 is a view similar to FIG. 2 but illustrating the operation of the trigger blocking means when the gun is pointed upwardly.

FIG. 4 is a view similar to FIG. 2 but illustrating the operation of the trigger blocking means when the gun is pointed downwardly.

FIG. 5 is a side cross sectional view of a modified form of the invention.

The gun **10** shown is a pistol or revolver having a hand grip **11**, barrel **12** and cylinder **13** which in this case is merely representative of a rotating cylinder but does not actually rotate. These parts of the gun or pistol can be of any conventional design and do not contribute to the novelty of the present invention. It is essential for this invention that the trigger mechanism of the gun to which it is to be applied include at least one part that pivots about an axis during firing thereof, i.e., when the trigger is pulled. The trigger **14** in the pistol **10** is pivotable about the axle or shaft **15**. A spring **16** which is held by shaft **15** is adapted to return the trigger after it is pulled to its original position. The portion of the trigger end covered by shield **17** operates the hammer **18** which is held in the closed position shown in FIG. 1 by spring **19**. The trigger **14**, hammer **18**, etc., are of conventional design and need not be described in detail for an understanding of the invention. As stated above it is only necessary that a part of the trigger-hammer mechanism be pivotable for the jamming means of the present invention to be added.

In the present form of the invention the jamming means **20** is secured to the trigger device **14** and rotates on the shaft **15** with said trigger device. The means **20** is a type of ratchet which can always rotate clockwise but which will be prevented from rotating counterclockwise by the pendulum stop **21** or **22** when the pistol is pointed upwardly as shown in FIG. 3 or downwardly as shown in FIG. 4. The ratchet **20** may be secured to the trigger device **14** in any way as by welding, soldering, keying, etc., or, as shown in FIG. 1, it may be attached by means of screws **23**, **24**. The ratchet **20** contains two cut away portions or notches **30** and **31** forming a stepped spur **32** therebetween.

The pair of pendulum pawls or dogs **21**, **22** are loosely mounted on the side casing **33** of the pistol **10**. The pendulum pawl **21** is pivotally mounted on the axle **34** above the cut away portion **30** and in front of the spur means **32**. When the pistol is held level, as shown in FIG. 2, the lower end of this pawl is in the deepest part of the cut away portion **30** and upon pulling the trigger the ratchet **20** will be pivoted counterclockwise and will push the pawl **21** out of its path. When the gun is tilted upwardly, however, the pawl **21** rotates counterclockwise due to the pull of gravity and comes to rest adjacent one of the steps of the spur **32**. When the gun is tilted forwardly the pawl rests against the unstepped side of the cut away portion **30** and will not interfere with the operation of the trigger means **14**.

The pendulum pawl **22** is pivotally mounted at **35** so that its free lower end is outside and to the rear of the orbit of ratchet **30** when the pistol is held level or is tilted upwardly. If the pistol is pointed downwardly, however, the pawl **22** swings forwardly and/or downwardly (to the left as shown in FIGS. 1 and 2) into the path of the step **36** of ratchet **30** and thus prevents the trigger from being pulled far enough to fire the gun. It will be noted that the pawls **21** and **22** prevent the operation of the trigger mechanism even if the pistol is brought to level position after trigger has first been put under tension in an unlevel position, unless, of course, the trigger is first released to permit the jammed pawl **21** or **22** to swing again while the gun is held in level position.

FIG. 5 shows a modified form of device in which pulling the trigger **14** to fire the gun when the gun is held level also operates an electrical noise making device. The barrel **12** of the gun contains one or more batteries **40** which are grounded to the metal barrel **12** at the negative end and are connected at the positive end **41** to a switch device **42** having a movable arm **43** in the path of the end **44** of hammer **18**. When arm **43** is pressed upwardly by portion **44** of hammer **18** it contacts the stud **45** completing the electrical circuit to a motor device **46**. The motor **46** and train of speed reduction gears **47**, **48**, **49**, **50**, etc., and holding frame **60** are suitably attached within the hollow barrel portion of the toy gun. Rotation of the motor **46** sets gears **47**—**50** in motion. The shaft **51** which rotates with gear **50** carries a wheel **52** on which a plurality of projections **53** extend. Projections **53**, in rotating, bend and release spring means **54** which is attached to the body of the gun by means of a block **55**. Thus the vibrational sound of the spring means **54** is set in motion when the gun is held level and the trigger is pulled to a sufficient distance to operate switch **43**, **45**.

In some cases it may be desirable to prevent the pistol or gun from shooting only when held in an upwardly tilted position or in other cases only when pointed downwardly. In such cases only one of the pendulum pawls **21** or **22** is needed.

The gun or pistol of the invention is especially useful for practicing the steps of drawing the gun from a holster, leveling and shooting. The pistol or gun of the invention also makes it possible for two or more applicants to draw against each other and the improvement of the invention makes it abundantly clear who has succeeded in drawing, leveling and firing their pistol first especially when the pistols are loaded with blank cartridges or caps.

This application is a continuation-in-part of applicant's U.S. application Serial No. 740,356 filed June 6, 1958, and now abandoned. In that application the idea of providing a gun or pistol with an electrical mechanism

which prevents the gun from discharging when not first brought to level position before pulling the trigger. The present application differs from that prior application in that the blocking means is purely mechanical in nature.

The features and principles underlying the invention described above in connection with specific exemplifications will suggest to those skilled in the art many other modifications thereof. It is accordingly desired that the appended claims shall not be limited to any specific feature or details thereof.

I claim:

1. In a toy or practice gun of the type comprising a trigger mechanism which operates the hammer through a trigger which is mounted to pivot about an axis, the improvement preventing the trigger mechanism from operating when the gun is pointed in at least one non-level position comprising

shaft means on the body of said gun for pivotally mounting the trigger of said trigger mechanism to the body of said gun,

said trigger including ratchet means positioned thereon so as to pivot coaxially with said trigger about said shaft means,

said ratchet means having at least one notch therein,

at least one pivoting pawl freely mounted in said gun adjacent the ratchet so as to be rotated by the pull of gravity when the gun is tilted,

means adjacent the free end of said pawl adapted to bear against said notch of said ratchet and prevent movement of the trigger for a distance sufficient to operate said trigger mechanism until the gun is brought from a downwardly pointing to a substantially level position.

2. In a toy or practice gun of the type comprising a trigger mechanism which operates the hammer through a trigger which is mounted to pivot about an axis, the improvement preventing the trigger mechanism from operating when the gun is pointed in at least one non-level position comprising

shaft means on the body of said gun for pivotally mounting the trigger of said trigger mechanism to the body of said gun,

said trigger including ratchet means positioned thereon so as to pivot with said trigger about said shaft means,

said ratchet means having two spaced notched portions therein,

two pivoting pawls freely mounted in said gun so as to be rotated by the pull of gravity when the gun is tilted,

said pawls being spaced from each other but both being adapted to pivot in the path of said ratchet means,

a first of said pawls being adjacent to but in front of a first of said notched portions and the second of said pawls being adjacent to but back of the second of said notched portions when the gun is held in level position whereby tilting the gun in one vertical direction swings one of said pawls into position adjacent its notched portion of the ratchet and tilting the gun in the other vertical direction swings the other of said pawls into position adjacent its notched portion of the ratchet.

3. In a toy or practice gun of the type comprising a trigger mechanism which operates the hammer through a trigger which is mounted to pivot about an axis, the improvement preventing the trigger mechanism from operating when the gun is pointed in at least one non-level position comprising

shaft means on the body of said gun for pivotally mounting the trigger of said trigger mechanism to the body of said gun,

said trigger including ratchet means positioned thereon so as to pivot with said trigger about said shaft means,

said ratchet means having two spaced stepped portions therein,

two pivoting pawls freely mounted in said gun so as to be rotated by the pull of gravity when the gun is tilted,

said pawls being spaced from each other but both being adapted to pivot in the path of said ratchet means,

a first of said pawls being adjacent to but in front of a first of said stepped portions and the second of said pawls being adjacent to but back of the second of said stepped portions when the gun is held in level position whereby tilting the gun in one vertical direction swings one of said pawls into position adjacent its stepped portion of the ratchet and tilting the gun in the other vertical direction swings the other of said pawls into position adjacent its stepped portion of the ratchet.

4. A gun as claimed in claim 1 wherein the ratchet means is formed from a separate piece of material and is affixed to said trigger.

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