Nov. 23, 1965 J. W. RYAN 3,219,023

TOY REVOLVER INCLUDING MEANS FOR HOLDING THE HAMMER IN EITHER INTERMEDIATE OR FULLY COCKED POSITION

Filed March 7, 1962 2 Sheets-Sheet 1

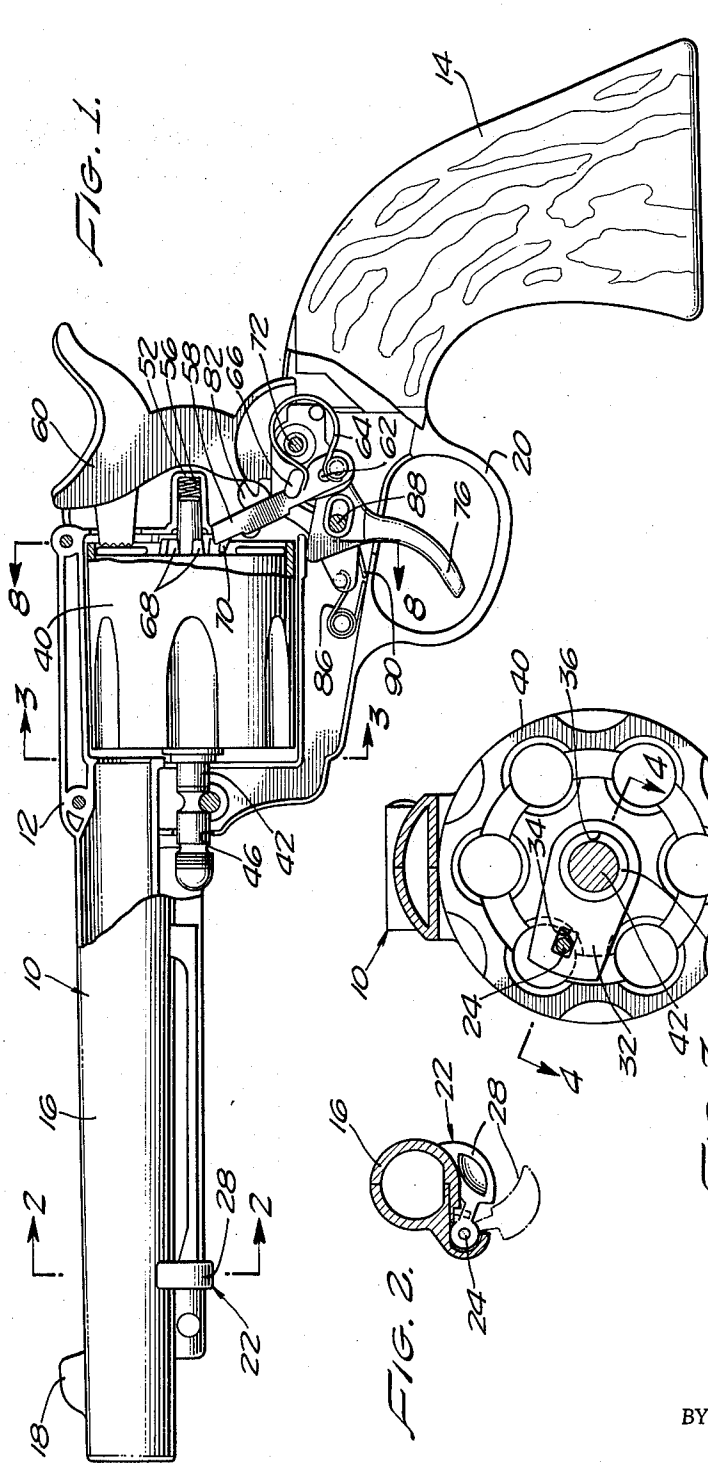


FIG. 1.

FIG. 2.

FIG. 3.

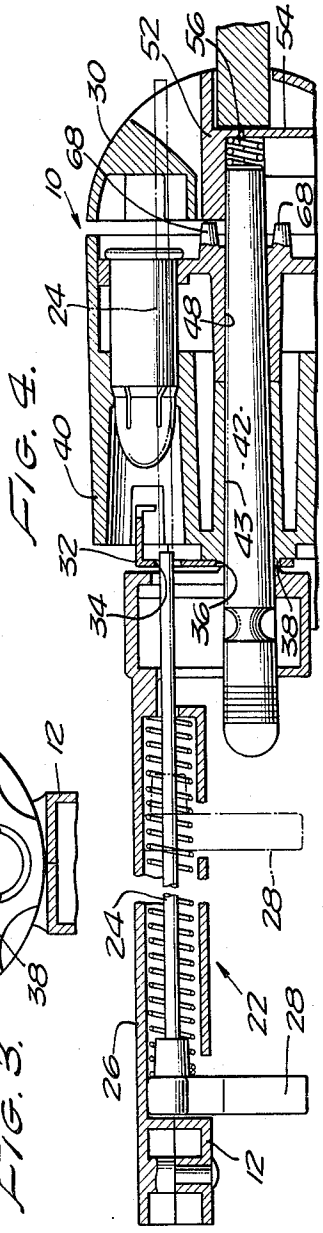


FIG. 4.

JOHN W. RYAN
INVENTOR.

BY Albert M. Lenzig

ATTORNEY

Nov. 23, 1965 J. W. RYAN 3,219,023

TOY REVOLVER INCLUDING MEANS FOR HOLDING THE HAMMER IN EITHER INTERMEDIATE OR FULLY COCKED POSITION

Filed March 7, 1962 2 Sheets-Sheet 2

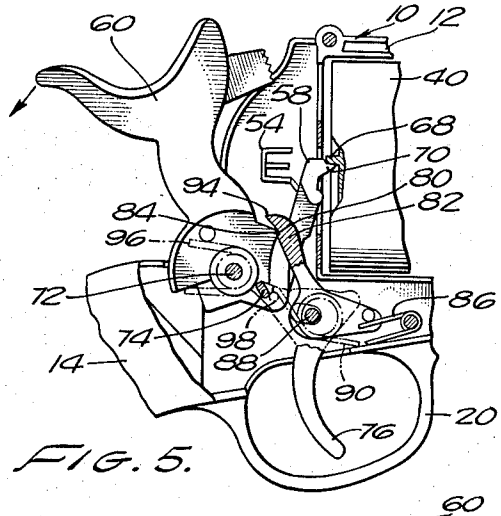


FIG. 5.

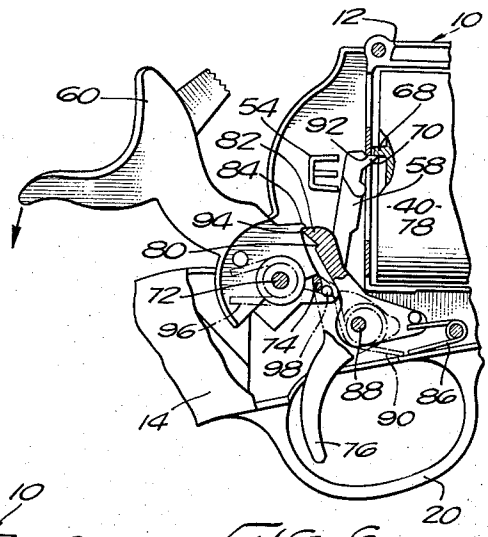


FIG. 6.

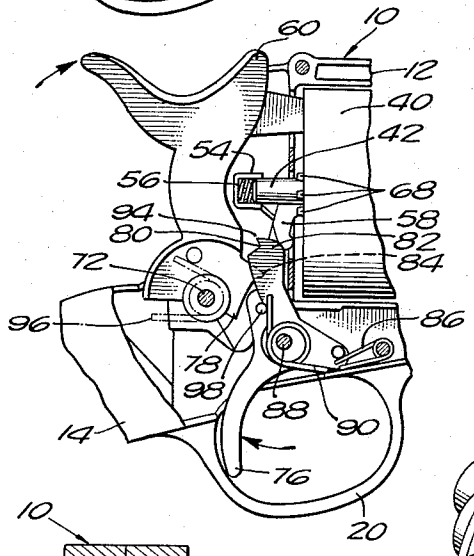


FIG. 7.

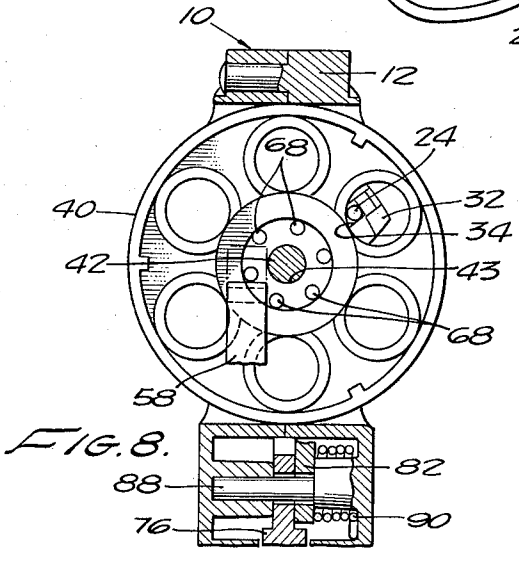


FIG. 8.

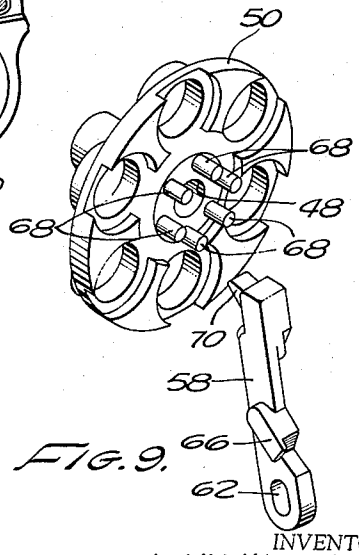


FIG. 9.

INVENTOR.
JOHN W. RYAN
BY Albert M. Benzig
ATTORNEY

United States Patent Office 3,219,023
Patented Nov. 23, 1965

3,219,023

TOY REVOLVER INCLUDING MEANS FOR HOLDING THE HAMMER IN EITHER INTERMEDIATE OR FULLY COCKED POSITION

John W. Ryan, 11027 Cashmere Ave., Bel Air, Calif.

Filed Mar. 7, 1962, Ser. No. 178,095
2 Claims. (Cl. 124—30)

This invention relates to improvements in a toy revolver and more particularly to improvement in a toy shooting shell revolver of the type which is capable of shooting bullet-shaped pellets of simulated cartridges therefrom.

With reference to the design of toy guns for children, the current trend is to provide more and more features for children to operate. Such features make a substantial contribution in producing a more realistic toy gun for children. Also, such features add to the interest of children in toy guns. Accordingly, the present invention adds several new features to a toy revolver. This invention includes an ejector mechanism for a spent or fully loaded cartridge. Another improvement of my invention is an intermediate cocked position where the revolver may be loaded or unloaded without being able to be fired. Still another feature of this invention consists of the ability of this toy revolver to be fully loaded and then fired by pulling the trigger while also the hammer may be first cocked by hand and then fired by pulling the trigger.

It is, therefore, an object of my invention to provide an improved toy revolver of the shooting-shell type having an ejector mechanism which removes a spent or fully loaded cartridge.

Another object of my invention is to provide an improved toy revolver which has an intermediate cocked position of the hammer which permits the loading or unloading of simulated cartridges for the revolver.

A further object of my invention is to provide an improved toy revolver of the type where in addition to double-action-operation, the hammer may be pulled by hand into a fully cocked position and remain cocked until the trigger is pulled, thereby releasing the hammer and firing the revolver.

These and other objects will be more readily understood by reference to the following specification, taken in conjunction with the accompanying drawings, in which

In the drawings:

FIGRE 1 is a left side view, in elevation, of a toy revolver designed and constructed in accordance with this invention, with parts broken away for greater clarity.

FIGURE 2 is a section taken along line 2—2 of FIG. 1.

FIGURE 3 is a section taken along line 3—3 of FIG.1.

FIGURE 4 is a section taken along line 4—4 of FIG. 3.

FIGURES 5, 6 and 7 are views of the trigger mechanism in different positions as viewed from the right hand side of the revolver.

FIGURE 8 is a view taken along line 8—8 of FIG. 1.

FIGURE 9 is a fragmentary view showing the relationship between the cylinder plate and the clyinder rotating pawl.

With reference more particularly to the drawings, a toy revolver is shown therein by way of illustration, but not of limitation, and is generally indicated by the reference number **10**. The revolver **10** is made up of a frame **12** composed of two halves joined together along a longitudinal axis as illustrated in the drawings, a handle **14**, a tubular barrel **16**, a sight **18**, and a trigger guard **20**.

An improvement over the prior art is shown in FIG. 4, which illustrates a novel feature of this invention of an ejector mechanism for the purpose of ejecting the spent

or fully loaded cartridge through the door at the rear of the gun housing.

The ejector mechanism **22** is shown in FIG. 4 and consists of ejector rod **24** which is springloaded by ejector spring **26** and is movable into a retracted poistion underneath the gun barrel **16**. Ejector rod **24** can be moved towards the rear by lever **28** mounted thereon to eject a spent or fully loaded cartridge through the pivotally mounted door **30** at the rear of frame **12**.

A guide member **32** supports the end of ejector rod **24** which is inserted through hole **34** of guide member **32**. The lower portion of guide member **32** has a circular opening **36** which fits around the hub **38** of the cartridge cylinder **40** so that the guide member **32** rides on the hub **38**.

The cartridge cylinder **40** is supported by cylinder shaft **42** which is inserted through bore **43** of the cartridge cylinder **40** and which extends through bore **46** in the gun frame **12** into a socket **48** formed in the center of the cylinder plate **50**. The socket **48** of the cylinder plate **50** is supported in position when two halves of the gun frame **12** are joined together by abutment **52** mounted on one half of the frame **12** and E-shaped abutment **54** mounted on the other half of the frame **12**. A spring **56** inserted between the ends of the socket **48** of cylinder plate **50** and the end of the socket formed by abutment **52** and abutment **54** takes up any play which may occur in the movement of the cylinder shaft **42**. A pawl mechanism controls the rotation of the cartridge cylinder **40** by means of a pawl lever **58** which is pivotally mounted to the bottom portion of the hammer **60**. Pawl lever **58** has a slot **62** so it can be urged upward by horseshoe-spring **64** bearing against a shoulder **66** of the pawl lever **58**.

The pawl lever **58** engages a series of 6 pins **68** centrally located and circumferentially spaced on the cylinder plate **50** by means of a projection **70** at the upper end of the pawl lever **58**. As the hammer **60** is pulled back to the fully cocked position, the hammer **60** rotates counterclockwise around its pivot **72** mounted on the frame **12** and the lower portion of the hammer **60**, where the pawl lever **58** is pivotally mounted, moves upward, thereby raising the pawl lever **58** up so that its projection **70** engages one of the pins **68** which causes the cartridge cylinder **40** to rotate 60 degrees or one sixth of a complete revolution of cylinder **40**.

FIGURE 5 illustrates an improvement provided in this invention consisting of an intermediate cocked position of the hammer **60** to permit loading or unloading of the revolver and clockwise rotation of the cartridge cylinder **40**.

As shown in FIGURE 5, the hammer **60** is pulled back by hand into an intermediate cocked position and maintained there by trigger projection **74** of the trigger **76** engaging a shoulder **78** at the lower portion of the hammer **60**, and by a step **80** in the stop member **82** engaging a finger projection **84** of the lower portion of the hammer **60**. The stop member **82** is spring urged in a counterclockwise direction by stop spring **86** and is pivotally mounted on the same shaft **88** as the trigger **76** but is not connected to the trigger **76** in any way. The trigger **76** is spring urged in a counterclockwise direction by triger spring **90** and is pivotally mounted on shaft **88**.

When the hammer **60** is pulled back into the intermediate position and maintained there as aforesaid, the lower portion of the hammer **60** moves upward in a manner similar to that when the hammer is in the fully cocked position, but it moves only about half as far, so that the pawl lever **58** is not raised up enough to engage the pins **68** with the projection **70** for a full 60° rotation of the cartridge cylinder **40**. In this intermediate

position, the pawl lever **58** rocks back and forth, slipping over the pins **68** of the cylinder plate **50** to permit free rotation clockwise of the cylinder plate **50** and thus the cartridge cylinder **40**. Thus, the revolver **10** may be loaded or unloaded in this intermediate position on opening the door **30**.

FIGURE 6 shows the revolver in a fully cocked position of the hammer **60** with the cylinder **40** locked. As the hammer is pulled further backward from the intermediate position shown in FIGURE 5, pawl lever **58** moves up as previously described so that its projection **70** engages one of pins **68** thereby causing a full 60° rotation of the cartridge cylinder **40**. In this fully cocked position, the top of the pawl lever **58** engages the lower portion of the stop **92** and is fixed in position, thereby preventing further rotation of the cylinder **40** the stop is in the form of a flat transverse surface formed by parts of the side frames and it has an opening in it through which the extending part of the hammer passes to engage the shells in the bores of the cylinder **40**.

Simultaneously with the movement of the hammer **60** into the fully cocked position, the step **80** of the stop member **82** becomes disengaged from the finger projection **84** of the hammer **60** and the finger projection **84** then becomes engaged with the tips **94** of the stop member **82**. Stop spring **86** maintains its counterclockwise urging of stop member **82** and this urging is counterbalanced by the clockwise urging of the hammer **60** by hammer spring **96**. Although the hammer **60** has been rotated, thereby causing trigger projection **74** to rotate clockwise, trigger projection **74** maintains its engagement with shoulder **78** of the hammer **60** in the fully cocked position. Due to the rotation of the hammer **60**, the trigger **76** is moved back toward the rear portion of the trigger guard **20**. In this manner, the hammer **60** is maintained in a fully cocked position with the cylinder **40** locked.

FIGURE 7 shows the revolver **10** in the fired position of the hammer **60** striking a cartridge (not shown). As the trigger **76** is pulled back as far as it will go, the trigger projection **74** becomes disengaged from shoulder **78** of the hammer **60**, and a pin **98** on the trigger **76** pushes the stop member **82** and its tip **94** out of engagement with the finger projection **84** of the hammer **60**, thereby releasing the hammer **60** and subjecting the hammer **60** to the action of hammer spring **96** which automatically pivots the hammer **60** forward into engagement with a cartridge (not shown) to fire the revolver.

Thus, my invention provides a double action revolver which can be fully cocked by hand and then fired by pulling the trigger.

While I have shown and described by invention herein

in what I believe to be the most preferred and practical embodiment, it is understood that various changes in the details of construction and arrangement of parts may be made without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. In a toy revolver having a revolving cartridge cylinder and a frame, and a tubular barrel mounted on one end of the frame, the combination comprising: a pivotally mounted hammer on said frame, said hammer including an upper portion and a lower portion, said lower portion having a trigger-engaging shoulder and a finger projection provided thereon, a spring biased trigger actuating means to actuate the hammer in forward and reverse pivoting movements, said spring biased trigger acuating means being pivotally mounted in said frame adjacent said hammer and including a trigger projection engageable with said trigger-engaging shoulder to actuate said hammer in said reverse pivoting movement, a trigger pin on said trigger actuating means, and spring means biasing said hammer for said forward movement, means for holding the hammer in an intermediate position or in fully cocked position from which it can be released by pulling the trigger, said holding means being rotatably mounted in said frame, independently of said trigger actuating means, in the path of travel of said trigger pin and having an end surface at one end and a step portion intermediate its ends, said step portion being engageable with said fiinger projection to retain said hammer in said intermediate position, said end surface being directly engageable with said finger projection to retain said hammer in said fully cocked position, said holding means being rotated out of engagement with said hammer upon engagement of said holding means by said trigger pin.

2. A toy revolver as in claim **1** including means actuatable by the trigger to rotate the cylinder and including means to prevent rotation of the cylinder when the hammer is in fully cocked position.

References Cited by the Examiner

UNITED STATES PATENTS

Re. 652	2/1859	Ells	42—65
99,505	2/1870	White	42—68 X
158,957	1/1875	Mason	42—68 X
210,506	12/1878	Dodge	42—65
336,021	2/1886	Smith	42—65
2,733,529	2/1956	Ruger	42—67
2,855,715	10/1958	Weimer	42—58
2,927,390	3/1960	Lewis	42—65

DELBERT B. LOWE, *Primary Examiner.*