United States Patent [19]

Baker

[11] **3,747,251**

[45] **July 24, 1973**

[54] **SAFETY MECHANISM HAVING COCKED INDICATOR**

[75] Inventor: **Richard L. Baker,** Wallingford, Conn.

[73] Assignee: **Colt Industries Operating Corp.,** Hartford, Conn.

[22] Filed: **Dec. 21, 1971**

[21] Appl. No.: **210,316**

[52] **U.S. Cl.** ..... **42/70 D,** 42/1 A, 42/1 C, 42/23, 42/70 R

[51] **Int. Cl.** **F41c 17/00,** F41c 11/04

[58] **Field of Search** ..... 42/70 D, 70 R, 1 C, 42/1 A, 23, 66

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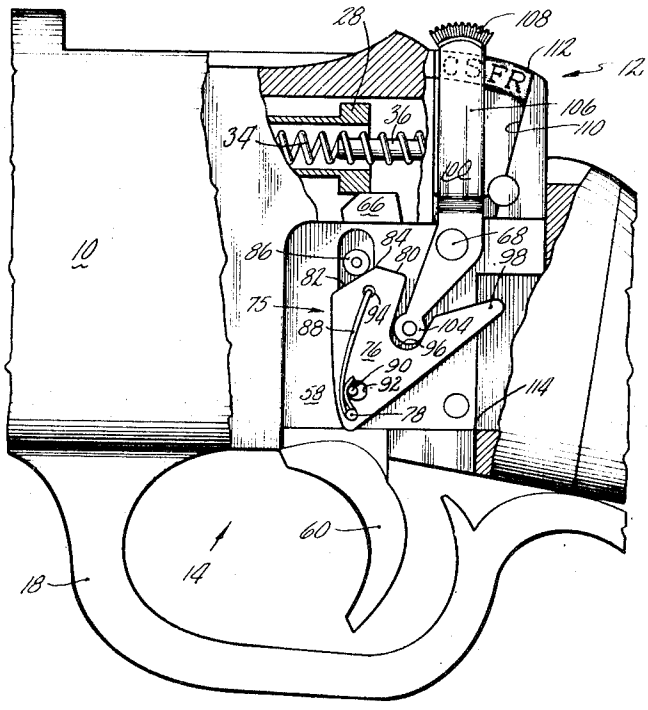
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Primary Examiner—Benjamin A. Borchelt
Assistant Examiner—C. T. Jordan
Attorney—Radford W. Luther et al.

[57] **ABSTRACT**

A firearm has a falling breechblock movable between retracted and battery positions. A striker, adapted to fire a cartridge, is mounted within a passage in the breechblock for movement between cocked and firing positions. The breechblock is provided with a trigger mechanism to control the release of the striker from the cocked position. The trigger mechanism includes a sear to engage the striker to maintain it in the cocked position, and a trigger to release the sear from such engagement. A cam plate member, whose discrete positions portray the firearms condition, is pivotally mounted upon the trigger mechanism and includes first and second surfaces defining an apex therebetween which are adapted to contact a roller secured to the sear. When the roller is in engagement with the first surface, the striker cannot be released from the cocked position by movement of the trigger. When the firearm is cocked and ready, the roller rests upon the second surface of the cam plate member so as to subsequently displace the cam plate member when the striker moves from the cocked position to the firing position. When the roller engages the first surface, or the apex of the cam plate member, the searing surface of the trigger is spaced from the sear so that the firearm will not fire should the trigger be pulled when the firearm is in a "half-safe" condition and then subsequently placed in an apparent cocked and ready condition. An indicating lever is mounted upon the trigger mechanism for pivoting movement in response to displacements of the cam plate member. A legend associated with the indicating lever is imprinted on the firearm to indicate whether the firearm is cocked and ready, cocked and safe, or fired.

15 Claims, 5 Drawing Figures



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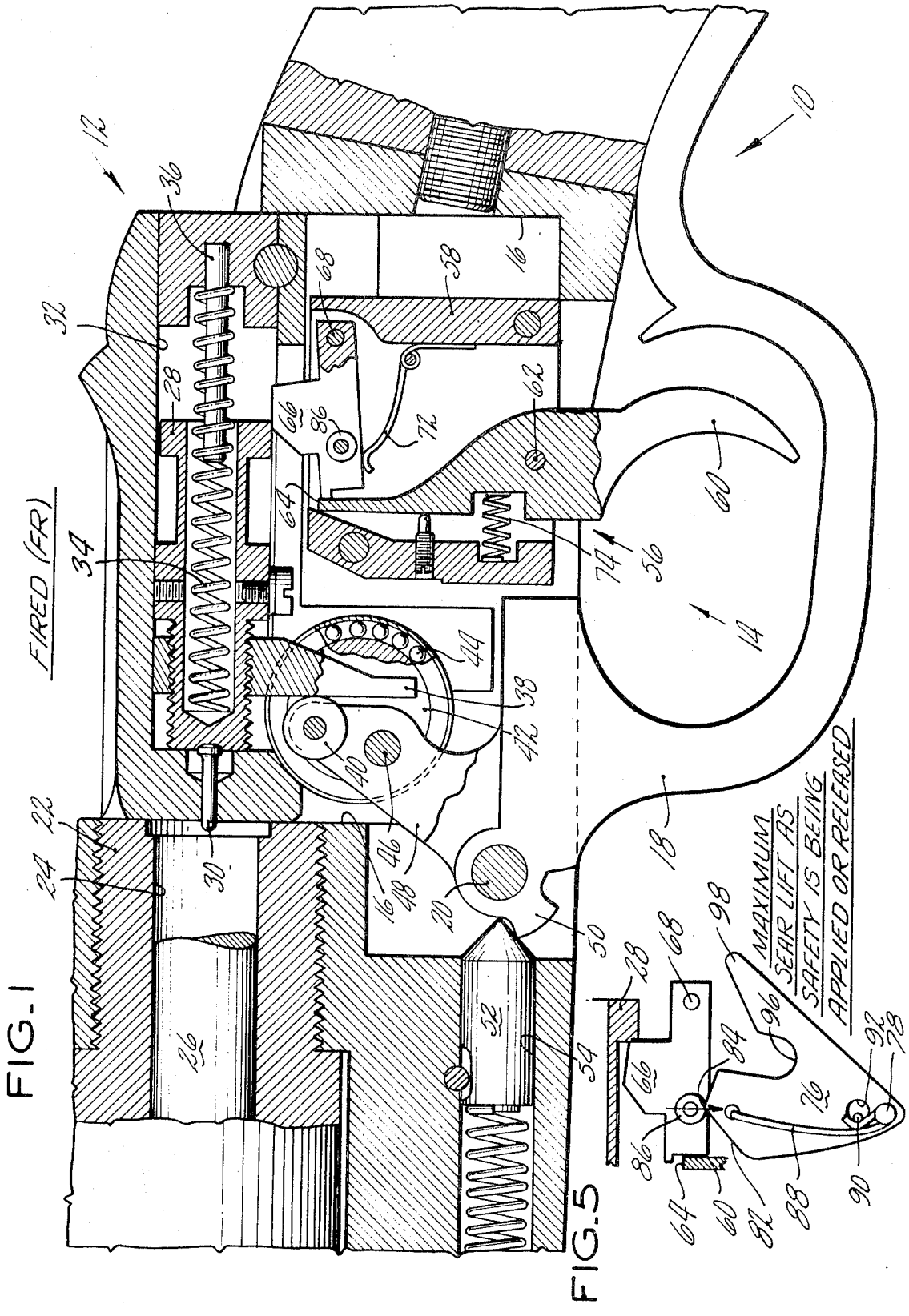


FIG. 1

FIG. 5

FIG. 2

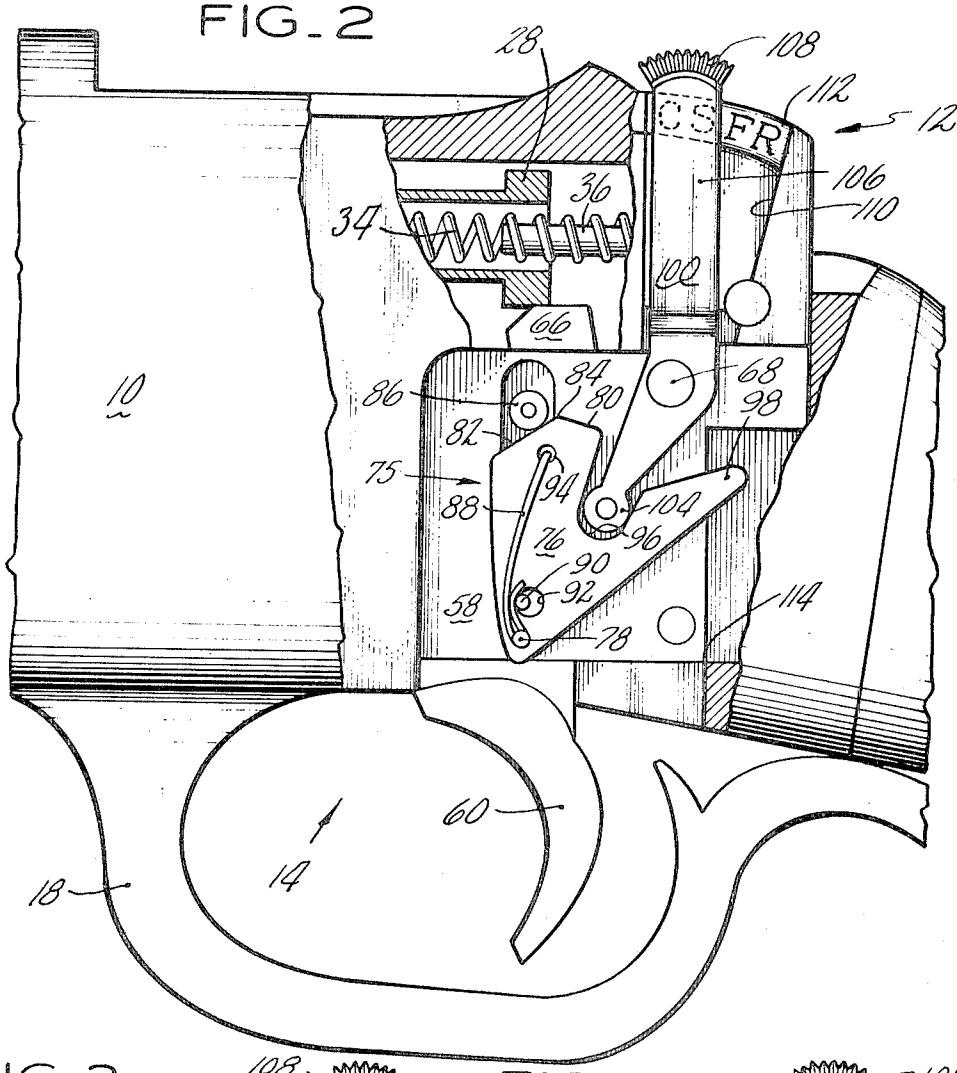


FIG. 3

SAFETY APPLIED (CS)

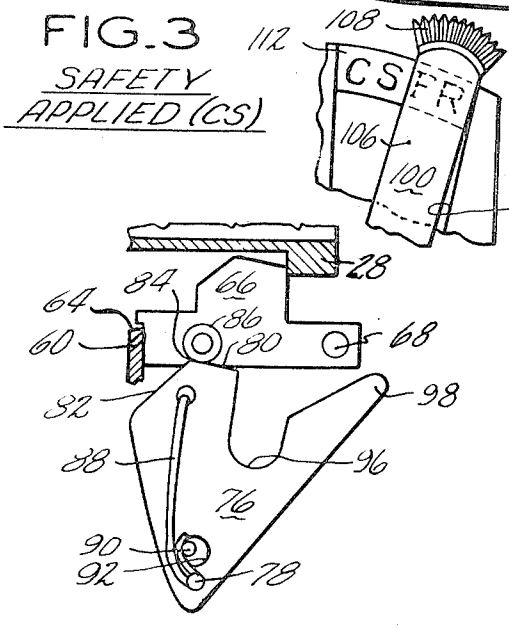
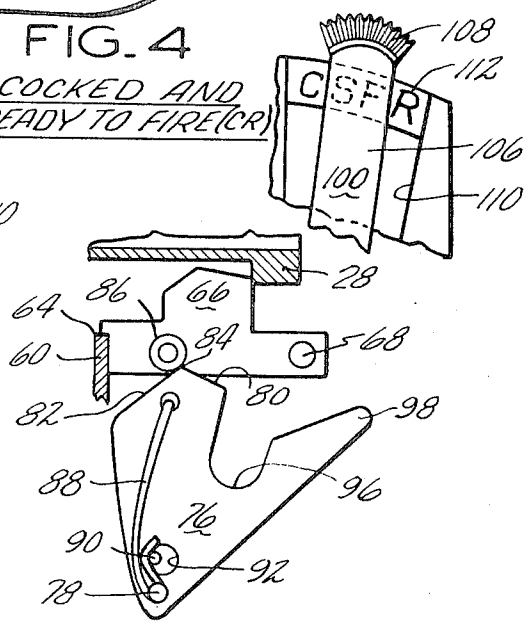


FIG. 4

COCKED AND READY TO FIRE (CR)



SAFETY MECHANISM HAVING COCKED INDICATOR

BACKGROUND OF THE INVENTION

This invention relates to firearms, and more particularly to safety devices for firearms. The invention further relates to indicators for showing the condition of the firearm. Even more particularly, the invention relates to firearms incorporating a breechblock having a striker mounted therein.

In many prior art firearms, it is possible to place the safety selector to a position slightly displaced from the full-safe position, subsequently pull the trigger without firing the firearm, and then release the safety to effect a discharge of the firearm. The firing of a firearm in such a manner is a highly undesirable occurrence with respect to safe operation of the fire-arm. There is thus a need in such firearms to provide a safety mechanism which when placed in an apparently safe position, displaced from the full-safe position, will not cause the firearm to discharge a cartridge when the safety is placed in the firing permitting position.

Also, in the past, firearms have been provided with devices for indicating whether the firing means, such as a striker, occupies a cocked position, or a fired position. Because these firearms have also incorporated separate safety devices, in order to ascertain the condition of such a firearm, it is necessary to observe the position of the safety device as well as that of the cocked indicator. Obviously, it would be advantageous to have a single indicator display the cocked and safe, cocked and ready, and fired conditions of the firearm.

SUMMARY OF THE INVENTION

The invention, which is generally applicable to firearms incorporating a breechblock, such as the falling breechblock type or the bolt action type, provides a safety device which is incapable of firing the firearm except upon depression of the trigger. In a firearm according to the invention, the safety device may be positioned between its firing preventing and firing permitting positions, that is, part-way on safe, the trigger subsequently pulled and released, and the safety device returned to the firing permitting position without encountering any danger of discharge of the firearm.

The heart of the invention is a safety cam plate member movably mounted in the firearm and having first and second surfaces thereupon defining an apex therebetween. The cam member is movable between a safety position and a final position. A sear, which retains the striker in the cocked position and is adapted to release the striker for discharging the firearm, has a roller mounted thereupon which is adapted to contact the first surface so as to maintain the sear in engagement with the striker irrespective of trigger movement. When the cam member occupies an intermediate position, the roller contacts the second surface of the cam member and is adapted to displace the cam member to the final position when the sear is released. Displacement of the cam member from the safety position to the intermediate position causes the roller to ride upon the first surface over the apex to the second surface. Although it is extremely unlikely that the roller could hang upon the apex because of the low friction engendered between the cam member and the roller, and the geometry of the cam member itself,, which functions to effect an urging of the cam member in one direction when the roller is on the first surface, and an urging of the cam member in the other direction when the roller is on the second surface, it is, nevertheless, conceivable that the cam member could assume this half-safe position. In order to insure that the firearm will not fire when the cam member is displaced to the intermediate position from such a half-safe position, the cam member is countoured such that when the roller contacts the apex, the searing surface of the trigger is free to return to a normal position when depressed and subsequently released, so that this displacement of the cam member will effect engagement between the sear and the searing surface of the trigger. Hence, a safety mechanism according to the invention is not only resistant to being placed in a half-safe condition, but is also adapted to prevent accidental discharge of the firearm by release thereof.

Since the safety cam member of the invention is positionable in three discrete positions which depict the condition of the firearm, a cocked indicator, which may assume various forms, may be operatively associated with the cam member to indicate the condition of the firearm. For example, in a preferred version, a lever is displaced in accordance with the movements of the cam member so as to thereby assume positions representative of the firearm's condition. Thus, a user of the firearm need only refer to one indicator to determine the condition thereof.

As an ancillary feature of the invention, the cam member is adapted to be automatically displaced to the safety position by a spring or, should the spring fail or become ineffective, a mechanical means during cocking of the firing mechanism. This is a highly desirable arrangement because it forestalls the firing of the firearm by impacts occasioned during the cocking process.

It will, therefore, be appreciated that a safety mechanism according to the invention provides positive safety action both during and after cocking the firearm, as well as indicating the condition of the firearm.

Accordingly, it is a primary object of the invention to provide a safety mechanism for a firearm which is incapable of firing the firearm when released.

It is another object to provide a safety mechanism for a firearm which resists placement in a half-safe position.

It is still another object to provide a cocked indicator for a firearm which indicates whether the firearm is cocked and safe, cocked and ready, or fired.

It is a further object to provide a safety mechanism for a firearm which is automatically applied to render the firearm safe upon cocking.

These and other objects and advantages will become more readily apparent from the following detailed description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a sectional side elevational view of a firearm according to the invention.

FIG. 2 is a side elevational, breakaway view of the firearm of FIG. 1, showing the details of the safety mechanism of the invention.

FIG. 3 is a side elevational view of the safety mechanism of FIG. 2, showing the respective positions of the components thereof when the firearm is in a cocked and safe condition.

FIG. 4 is a side elevational view of the safety mechanism of FIG. 2, showing the positions of the respective components thereof when the firearm is in a cocked and ready condition.

FIG. 5 is a side elevational view of the safety mechanism of FIG. 2, showing the positions of the respective components thereof when the firearm is in a partly safe condition.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Referring to FIG. 1, there is shown a firearm 10 having a falling breechblock 12. The manner of the operation of the fire-arm of FIG. 1 is more completely shown and described in U.S. Pat. application No. 856,968, entitled "Firearm with Falling Breechblock," filed in the names of Carl T. Colliander and Robert L. Hillberg, and now U.S. Pat. No. 3,621,596. The details of the construction and operation of the firearm shown in the aforementioned application are repeated here only to the extent necessary for an understanding of the present invention. The firearm 10 includes a receiver, generally shown at 14, which has a vertically extending passage 16 for guiding the vertical movement of the breechblock 12 between battery and retracted positions, the illustrated position of FIG. 1 being the battery position. Upward and downward movement of the breechblock 12 is occasioned by actuation of a cocking lever 18 about its pivot 20. A barrel 22, having a chamber 24 for receiving a cartridge 26, is threaded into the receiver 14 such that the chamber 24 communicates with passage 16. When the breechblock 12 is in its lowered or retracted position, the cartridge 26 may be inserted in the chamber 24. Lowering of the breechblock 12 also effects extraction of a spent cartridge in chamber 24, as is explained in detail in the aforementioned patent.

A striker 28, with a firing pin 30 at the forward end thereof, is mounted in breechblock 12 within a passage 32 for sliding axial movement between cocked and firing positions, the firing position being the illustrated position. A compression spring 34 coiled about a rod 36 biases the striker towards its firing position and provides the impetus thereto for firing a cartridge. Threadably secured to the forward end of striker 28 is a depending abutment finger 38 which is urged rearwardly by a roller 40 mounted upon the lever 18 as the lever 18 is pivoted from the illustrated position. By virtue of the connection between the finger 38 and striker 28, extension of the cocking lever 18 causes the striker 28 to move rearwardly towards its cocked position. The sides of the breechblock 12 include two discs 42, mounted for rotation upon needle bearings 44, for minimizing friction when the breechblock is lowered to the retracted position and subsequently raised to the battery position. The lever 18 is connected to the discs 42 by means of a pin 46 in the upper portion 48 of lever 18. As lever 18 is extended from the illustrated position, the roller 40 rearwardly displaces finger 38 a distance sufficient to withdraw the firing pin 30 from the cartridge 26 so that downward movement of the breechblock 12 will not be impeded by the firing pin 30. Further extension of the lever 18 causes downward movement of the breechblock 12 and simultaneous rearward movement of the striker 28. When the breechblock 12 is approximately half-way between the battery and retracted positions, the striker 28 will assume its cocked position. In order to maintain the breechblock 12 in the battery and retracted positions, a protrusion 50 is formed on the lever 18, adjacent pivot 20, for engaging a spring loaded plunger 52 slideably mounted within bore 54. Obviously, extension or retraction of the lever 18 will affect a reciprocating movement of plunger 52.

Fixedly mounted to the breechblock 12 for upward and downward movement therewith is a trigger mechanism, generally shown at 56, which includes a housing 58 having a trigger 60 pivoted at 62 and having a searing surface 64 adapted to engage a sear 66 pivoted upon the housing 58 at 68. The trigger 60 is movable from the normal position, illustrated in FIG. 3, to a depressed position to disengage its searing surface 64 from the sear 66 to fire the firearm. The trigger 60 is biased to the normal position by means of a trigger spring 74; and the sear 66 is biased in a clockwise manner by torsion spring 72. The preload on the spring 74 may be controlled by means of an adjusting screw (not shown). Insofar as described, it will be noted that the illustrated trigger mechanism is conventional and commercially available.

Turning now to FIG. 2, there is shown a safety mechanism, generally indicated at 75. The main component of the safety mechanism 75 is a safety cam plate member 76, pivotally mounted upon the side of the housing 58 by means of a pin 78. In its preferred form, cam member 76 is a flat plate. Cam member 76 is formed so as to furnish a first peripheral surface 80, a second peripheral surface 82 and an apex 84 defined therebetween. The surfaces 80 and 82 are preferably flat and define an obtuse angle. However, the surfaces 80 and 82 could be curved if desired. Although the apex 84 is illustrated as being defined by the intersection of two flat surfaces, namely, surfaces 80 and 82, it will be understood that apex 84 could be constituted by a surface (such as a rounded surface) without departing from the principles of the invention. A projection 86 extends laterally from the side of sear 66 through the housing 58 and is adapted to bear against the periphery of cam member 76 as defined by surfaces 80 and 82. Projection 86 is preferably defined by a roller to minimize wear between the apex 84 and projection 86 when the cam member is displaced from the safety or striker release preventing position to an intermediate or striker release permitting position between the safety position and the final position illustrated in FIG. 2, the cam member 76 pivoting to the final position simultaneously with the striker's 28 movement to the firing position. Another advantage in having a roller coact with the form of apex illustrated in FIG. 2 is that the cam member will be less likely to assume an equilibrium position (half-safe position) between the safety position and the intermediate position. Furthermore, friction between the cam member and projection is diminished if projection 86 is constituted by a roller. A torsion spring 88 is mounted about pin 78 and a post 90, projecting through an aperture 92 in cam member 76, and is connected to the cam member 76 within another aperture 94 so as to urge the cam member 76 in a counterclockwise direction about pin 78. The urging of spring 88 insures that play between the projection 86 and the upper periphery of the cam member 76 will be eliminated and drives the cam member 76 to the safety position during cocking. Cam member 76 also has a recess 96 fashioned in the central portion thereof adja-

cent a tip 98 whose function is described hereinafter.

A safety lever 100 is pivotally mounted upon the housing 58 by means of an extension of the sear pin 68 in such a manner that the rounded lower end 104 thereof is snugly received within the recess 96 of cam member 76 so as to permit relative movement therebetween, and such that there is a correspondence between the position of the lever 100 and the cam member 76. The upper leg 106 of lever 100 terminates in a serrated surface 108 to facilitate displacement of the lever 100 by a user of the firearm. The upper portion 106 of lever 100 is received within a cavity 110 formed in the left side of the breechblock 12 in the upper rear portion thereof. The cavity 110 is partially defined by a surface 112 which has imprinted thereupon the letters C, S, F, and R. The upper portion 106 of the lever 100 is of a sufficient width to cover two adjacent letters on surface 112 so that the two remaining exposed letters of the legend indicate the condition of the firearm. It will be appreciated that in every discrete position of the lever 100, two letters of the legend upon surface 112 will be visible to a user of the firearm. Specifically, when the letters C and S are visible (FIG. 3), the firearm is in a cocked and safe condition; when the letters C and R are visible (FIG. 4), the firearm is in a cocked and ready condition, that is, it may be fired by depression of the trigger 60; and when the letters F and R are visible (FIG. 2), the firearm is in a fired condition, that is, the striker 28 occupies its firing position of FIG. 1.

As previously mentioned, it is somewhat difficult to displace the cam member 76 to an equilibrium position located between the safety position and the intermediate position in which the firearm is cocked and ready. This is mainly attributable to the slopes of the surfaces 80 and 82 and the provision of a roller upon the sear 66. When the striker 28 is moved slightly to the rear of its cocked position by an extending of lever 18, torsion spring 72 causes sear 66 to snap upwardly to engage a surface upon the lower part of striker 28. In addition, this action causes cam plate member 76 to be automatically urged to the safety position by the torsion spring 88 since the sear 66 is lifted far enough by torsion spring 72 to permit apex 84 to clear projection 86, or in the absence of spring 72, would be lifted by the cam member alone.

In the respective cocked and firing positions of striker 28, the sear 66 is urged downwardly by the bias of spring 34 and by the periphery of the striker 28. FIG. 3 shows the cam member 76 in the safety or full-safe position; and in this position, it will be noted that projection 86 is bearing against the surface 80, this bearing contact being attributable, of course, to the spring 34. In such a position, the projection 86 is urging the cam member 76 for rotation in a counterclockwise direction about pin 78, this rotation being limited by the contact between the upper portion 106 of lever 100 and the rear wall of cavity 110. Assuming now that the upper portion 106 of lever 100 is pushed forward from the indicating position of FIG. 3 to an extent sufficient to cause projection 86 to bear against the apex 84, the force vector transmitted to the apex 84 by the projection 86 passes through the pivot 78. Still further forward movement of the upper portion 106 of the lever 100 results in the projection 86 bearing against the second surface 82. With this latter occurrence, the cam member 76 is urged to rotate in a clockwise direction by the action of projection 86 upon surface 82 until the searing surface 64 of the trigger 60 contacts the sear 66, thereby terminating clockwise rotation. Hence, it will be appreciated that even if projection 86 is devoid of any roller mechanism, it will be difficult to hang the projection up on the apex 84, as shown in FIG. 5, so as to position cam member 76 in a semi-safe position.

The position of cam member 76 shown in FIG. 4 represents the intermediate position. In this position, it will be noted that the searing surface 64 engages the sear 66, and that the firearm is ready to discharge a cartridge by depression of the trigger 60. When the trigger is depressed and the firearm is fired by disengagement between the searing surface 64 and the sear 66, forward movement of the striker 28 towards the firing position produces further downward pivoting of the sear 66, thereby causing the projection 86 to further rotate the cam member 76 in a clockwise direction to its final position of FIG. 2. When the projection 86 is to the left of the apex 84, it will be noted that the torsion spring 88 maintains constant contact between the second surface 82 and the projection 86 so that the position of the cam member 76 affords a true representation of the condition of the firearm which is, of course, transmitted to the lever 100.

Assuming that a user of the firearm has placed the firearm in a safe condition, that is, in the cocked and safe condition, and subsequently the safety lever 100 is moved so as to cause the apex 84 to bind upon the projection 86, as can be seen from FIG. 3, when the projection 86 bears against surface 80, the searing surface 64 of trigger 60 is spaced from sear 66 so that the trigger 60 may be pulled and released without affecting the position of sear 66 in any way. When the apex 84 contacts the projection 86 (FIG. 5), the sear 66 will be pivoted to a position in contact with the cam member, wherein the greatest space exists between the searing surface 64 and sear 66, assuming that the trigger 60 is in the normal position. Hence, if a user should now depress and then release the trigger 60, the front face of sear 66 will not prevent the searing surface 64 of the trigger 60 from returning to the normal position, wherein the searing surface 64 engages the sear 66 upon a repositioning of the safety lever 100 to the cocked and ready indicating position. Obviously, if the trigger is held in the depressed position and the lever 100 returned to the cocked and ready position, the firearm will fire.

The cocking indicator device of the invention, as constituted by the lever 100 and the legend upon the surface 112 of the breechblock, functions as follows: In the cocked and safe indicating position of FIG. 3, that is, the safety position of cam member 76, it will be observed that the letters F and R are covered by the upper portion 106 of the lever 100. The exposed letters C and S thus indicate that the firearm is in a cocked and safe condition. If the lever 100 is moved forwardly to such an extent to allow the projection 86 to rest on the second surface 82 to the left of apex 84, the lever will then automatically move to a further forward position as the cam member 76 is rotated clockwise by the action of projection 86 upon surface 82. When the searing surface 64 of the trigger 60 engages the sear 66, movement of the cam member 76 terminates with a consequential stoppage of movement of the lever 100. Upon stoppage of this movement, the letters S and F are covered by the lever 100, and the exposed ledlers C and R (as shown in FIG. 5) indicate that the firearm is cocked

and ready, that is, a cartridge may be discharged by depressing the trigger **60.** Upon discharge of the firearm, the sear **66** is pivoted further downwardly by the striker **28,** thereby further rotating the cam member **76** in a clockwise direction which moves the lever **100** to the position of FIG. **2** in which the letters C and S are covered. The exposed letters F and R then indicate that the firearm has been fired.

It should also be noted that when the cam member **76** occupies the intermediate position, lever **100** can be pushed forward a small, but discernible, distance (e.g., one eighth of an inch) and allowed to spring back by the action of spring **88.** Thus, at night, a user of the firearm need not visually refer to the legend upon surface **112** to ascertain whether or not the firearm is cocked and ready.

An ancillary feature of the safety mechanism **74** is the provision of the tip **98** upon the cam member **76** which is adapted to contact an abutment **114** in the receiver **14** should dirt, rust, or failure of spring **88** prevent normal pivoting of cam member **76** during cocking. This contact will be occasioned during the downward movement of the breechblock **12** after the striker **28** has been moved to and is resting in the cocked position. Further downward movement of the breechblock **12** after initial contact between tip **98** and abutment **114** serves to automatically rotate the cam member **76** in a counterclockwise manner to the safety position. Hence, as in normal operation, when the breechblock **12** is subsequently raised to the battery position, the firearm is in a safe condition to thereby prevent accidental discharge due to jars and impacts.

The tip **98,** which in normal operation never contacts abutment **114,** thus provides mechanical insurance that cam member **76** will always swing counterclockwise to the safety position when the breechblock **12** is fully retracted.

Another ancillary feature of the invention resides in the inherent operating characteristics of the components which constitute the safety mechanism **75.** If the spring **72,** which urges the sear **66** upwardly, is removed, there is no impairment of the firearm's operation. The spring **88,** which biases the cam member **76,** is, alone, capable of lifting the sear **66,** as well as swinging the cam member **76** to the safety position. To illustrate this feature, assume that spring **72** is omitted. As the striker traverses the cocked position, spring **88** urges the cam member counterclockwise about pin **78** causing the projection **86** to be lifted by surface **82** until clearing apex **84.** However, provision of a spring for sear **66** is desirable since it contributes to positive operation and reduces shock upon firing.

A still further feature of the invention is that torsion spring **88** may also be removed without adversely affecting the functioning of the safety mechanism **76.** As previously discussed, cam member **76** may be displaced to the safety position by contact between tip **98** and abutment **114.** Thus, removal of spring **88,** while it may affect the cocked indicator to the extent that the cam member would be freely pivotable between the final and intermediate positions when the striker **28** is in the cocked position and could beget an erroneous reading of firearm condition, does not prevent displacement of the cam member **76** to the safety position since the tip **98** and abutment **114** will accomplish this action.

Obviously, many modifications and variations are possible in light of the above teachings without departing from the scope of the appended claims.

What I claim is:

1. In a firearm, the combination comprising:

a receiver having a passage therein;

a barrel mounted adjacent the receiver and having a chamber for receiving a cartridge;

a breechblock mounted in the passage for movement between retracted and battery positions, the breechblock covering the chamber to retain the cartridge therein in the battery position;

a striker mounted in the breechblock for movement between cocked and firing positions, the striker being adapted to fire the cartridge in the firing position when the breechblock is in the battery position;

a sear movably mounted in the receiver to engage and retain the striker in the cocked position;

a trigger, having a searing surface thereupon for engaging the sear, mounted for movement in the receiver between depressed and normal positions for engaging the sear in the normal position to retain the striker in the cocked position, the trigger being releasable from the sear by movement to the depressed position to permit movement of the striker from the cocked position to the firing position;

a projection mounted upon the sear; and

a cam member, having first and second surfaces defining an apex therebetween, mounted for movement in the receiver between safety and final positions such that the first surface contacts the projection in the safety position to maintain the sear in engagement with the striker irrespective of trigger movement, the searing surface is spaced from the sear when the projection contacts the apex to permit return of the trigger from the depressed position to the normal position, and the projection rides over the first surface to the second surface when the cam member is displaced from the safety position to an intermediate position in which depression of the trigger disengages the searing surface from the sear.

2. The combination of claim **1,** wherein the projection comprises:

a roller mounted for rotation with respect to the sear.

3. The combination of claim **1,** wherein the breechblock is mounted for upward and downward movement with respect to the receiver, and wherein the sear, the trigger and the cam member are mounted upon the breechblock for movement therewith and the striker is moved from the firing position to the cocked position by downward movement of the breechblock, and wherein the cam member comprises:

a tip adapted to contact the receiver during downward movement of the breechblock from the battery position to the retracted position when the cam member is in the final position such that the cam member is displaced from the final position to the safety position, whereby the firearm cannot be accidentally fired upon returning the breechblock upwardly to the battery position.

4. The combination of claim **1,** further including:

menas to indicate the position of the cam member.

5. The combination of claim **4,** wherein the indicating means comprises:

a lever pivotally mounted upon the firearm and operatively connected to the cam member so as to be rotated by the movement thereof, and so as to be capable of moving the cam member between the safety and intermediate positions; and

a legend imprinted upon the firearm adjacent the lever to indicate the cocked and safe, cocked and ready, and fired condition of the firearm.

6. The combination of claim **5,** wherein the legend comprises the successive letters C, S, F, and R, and wherein the lever is of a width sufficient to cover two adjacent letters, and wherein the lever covers the letters F and R when the cam member occupies the safety position, covers the letters S and F when the cam member occupies the intermediate position, and covers the letters C and S when the cam member occupies the final position, and whereby the exposed letters indicate the condition of the firearm.

7. The combination of claim **2,** wherein the cam member is mounted for pivoting movement, and wherein the first and second surfaces define an obtuse angle and are arranged with respect to the roller such that contact of the roller with the first surface urges pivoting movement of the cam member in one direction, and contact of the roller with the second surface urges pivoting movement of the cam member in the other direction, and wherein there is further provided:

means to limit the pivoting movement of the cam member urged by contact between the roller and the first surface.

8. The combination of claim **7,** wherein there is further provided:

spring means to bias the cam member in the first mentioned direction for urging the second surface into contact with the roller to thereby eliminate play therebetween, and to pivot the cam member from the final position to the safety position during movement of the breechblock from the battery position to the retracted position.

9. In a firearm having a chamber for receiving a cartridge, the combination comprising:

means to move between cocked and firing positions to fire the cartridge;

sear means to retain the firing means in the cocked position by engagement therewith;

trigger means to maintain the sear means in engagement with the firing means and to release the sear means to permit the firing means to move from the cocked position to the firing position;

safety means positionable to prevent and to permit release of the sear means by the trigger means when the firing means is in the cocked position; and

indicating means operatively connected to the safety means to indicate the release permitting position of the safety means, the firing position of the firing means, and the release preventing position of the safety means.

10. In a firearm having a receiver, the combination comprising:

means to move between cocked and firing positions to fire a cartridge from the firearm;

trigger means to retain the firing means in the cocked position, and to release the firing means for movemment from the cocked position to the firing position;

cocking means to move the firing means from the firing position to the cocked position;

safety means responsive to operation of the cocking means to move into a position in which release of the firing means by the trigger means is prevented;

spring means to automatically position the safety means in the release preventing position during movement of the firing means from the firing position to the cocked position; and

means responsive to operation of the cocking means to contact a surface in the receiver for automatically positioning the safety means in the release preventing position in the event the spring means fails to move the safety means.

11. In a firearm having a chamber for receiving a cartridge, the combination comprising:

striker means to move between cocked and firing positions to fire the cartridge;

sear means to move between an engaged position in which the striker means is retained in the cocked position and a disengaged position in which the striker means is in the firing position;

trigger means to maintain the sear means in the engaged position and to release the sear means to permit the striker means to move from the cocked position to the firing position;

safety means to move between a first position in which release of the sear means by the trigger means is prevented and a second position in which release of the sear means by the trigger means is permitted;

means responsive to movements of the sear means to move the safety means from the second position to a third position during movement of the striker means from the cocked position to the firing position; and

lever means to manually move the safety means between the first and second positions.

12. The combination of claim **11,** further including:

cocking means to move the striker means from the firing position to the cocked position; and

spring means to automatically move the safety means from the third position to the first position when the striker means is moved from the firing position to the cocked position.

13. The combination of claim **12,** wherein the safety means comprises:

means responsive to operation of the cocking means to contact a surface in the firearm and to automatically move the safety means from the third position to the first position in the event the spring means fails to move the safety means.

14. The combination of claim **11,** wherein the lever means comprises:

a lever pivotally mounted upon the firearm such that it may be rotated by the safety means and be capable of positioning the safety means between the first and second positions; and wherein there is further provided:

a legend imprinted upon the firearm adjacent the lever to indicate the first, second and third positions of the safety means.

15. The combination of claim **14,** wherein the legend comprises the successive letters C, S, F, and R, and wherein the lever is of a width sufficient to cover two adjacent letters, and wherein the lever covers the letters F and K when the safety means is in the first position, covers the letters S and F when the safety means is in the second position, and covers the letters C and S when the firing means is in the fIring position, and whereby the exposed letters will indicate the condition of the firearm

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