May 17, 1966 R. D. WHELAN 3,251,269

FIREARM WITH BOLT ACTUATED FIRE CONTROL MECHANISM

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Fig. 1

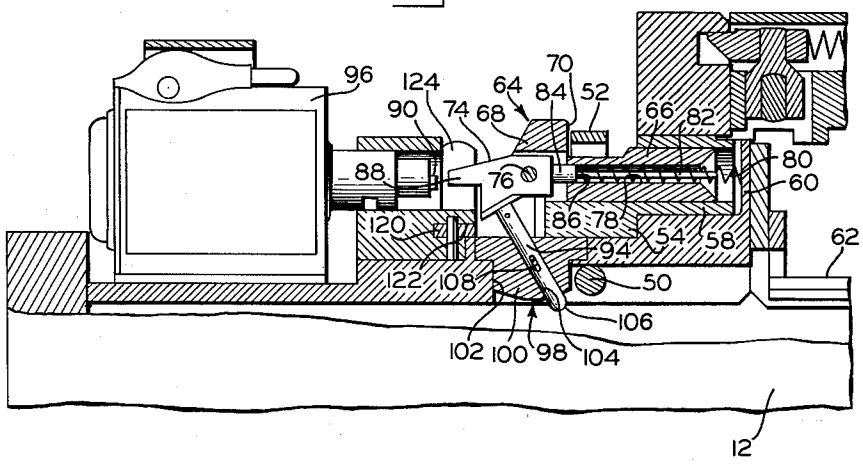
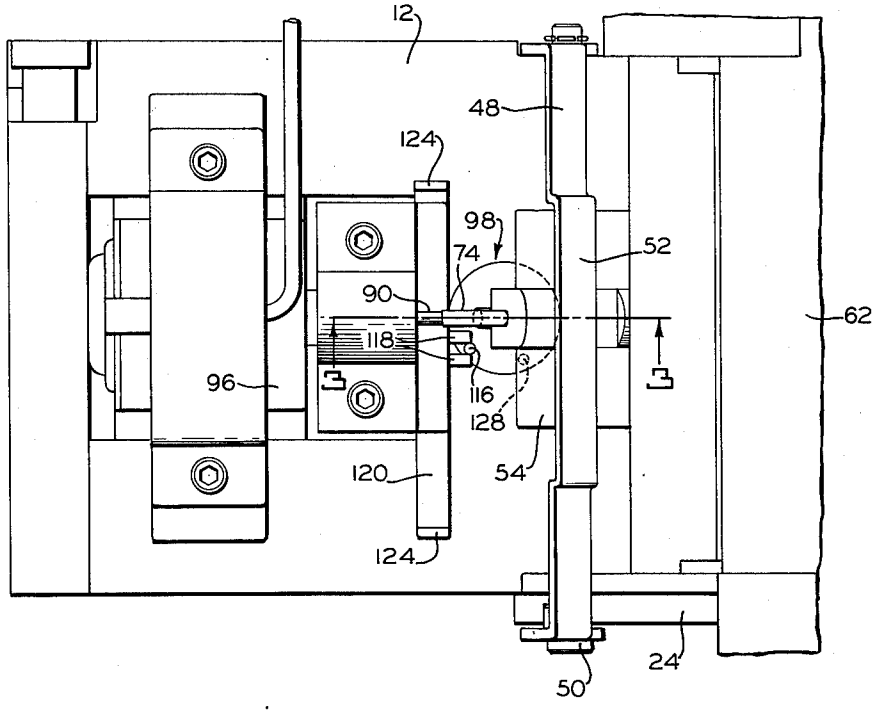


Fig. 2



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FIREARM WITH BOLT ACTUATED FIRE CONTROL MECHANISM

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Fig. 3

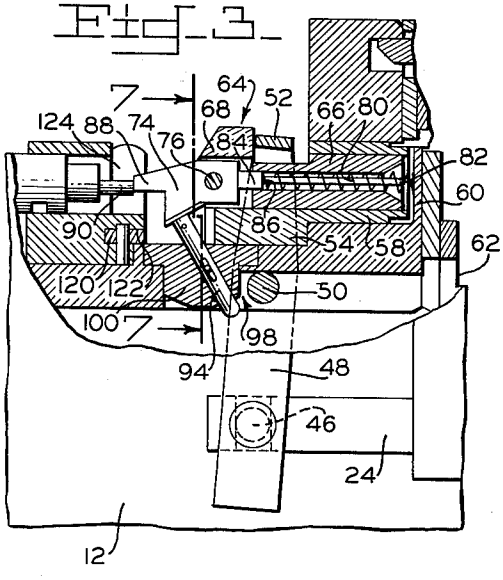


Fig. 4

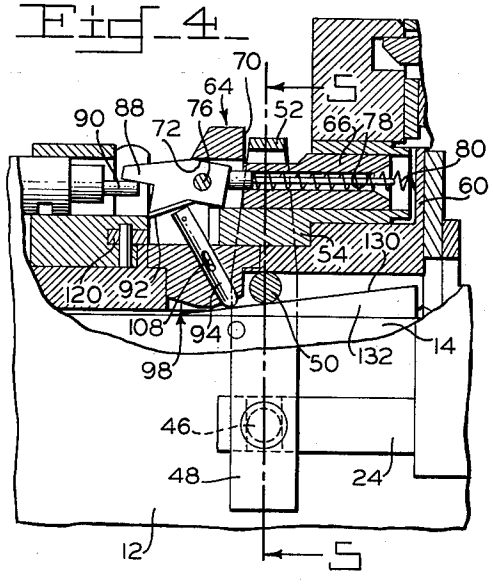
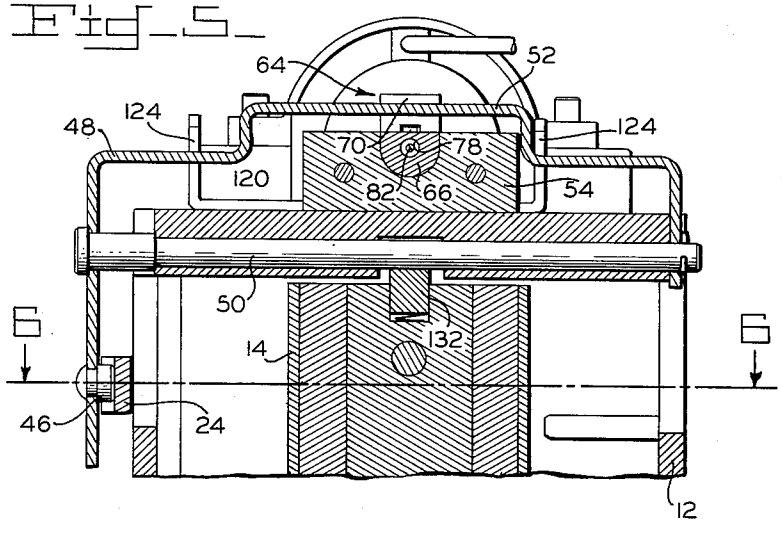


Fig. 5



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FIREARM WITH BOLT ACTUATED FIRE CONTROL MECHANISM

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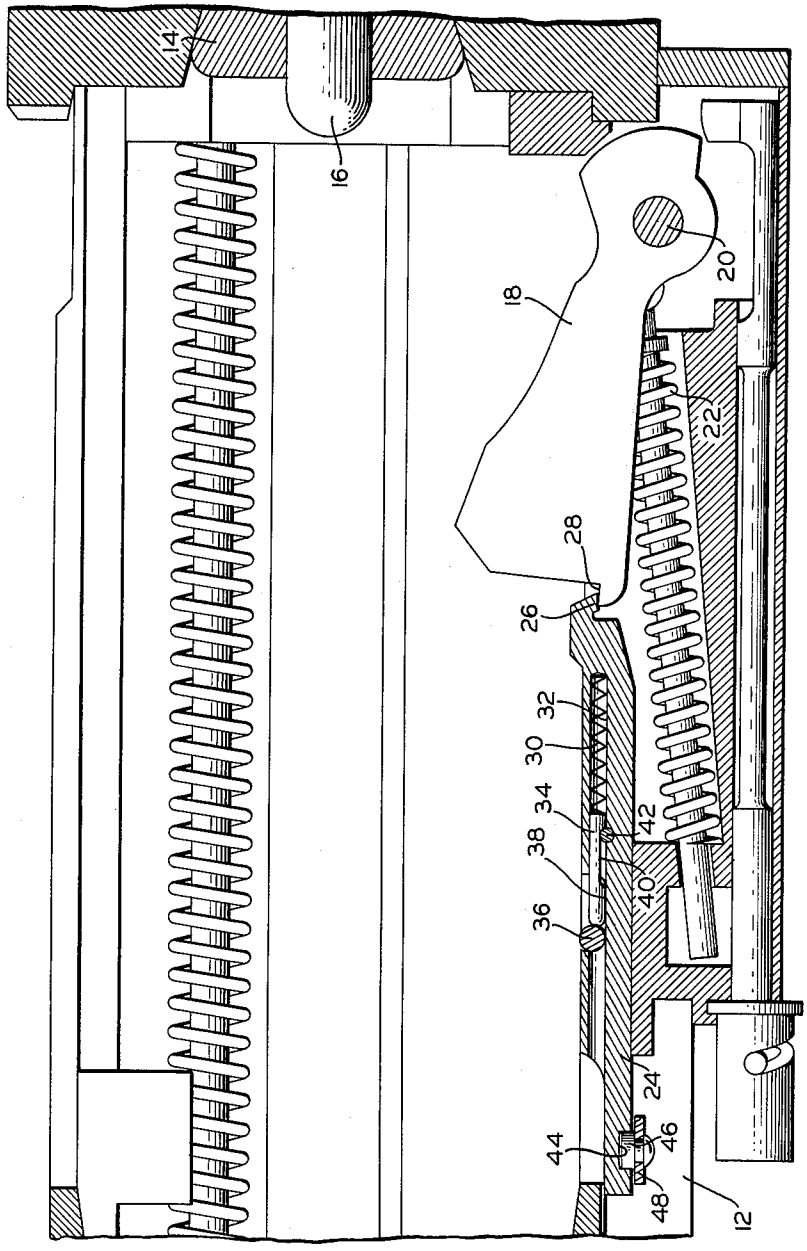
Fig. 3



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FIREARM WITH BOLT ACTUATED FIRE CONTROL MECHANISM

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Fig. 7

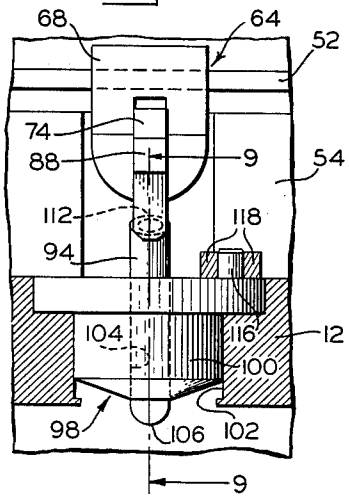


Fig. 8

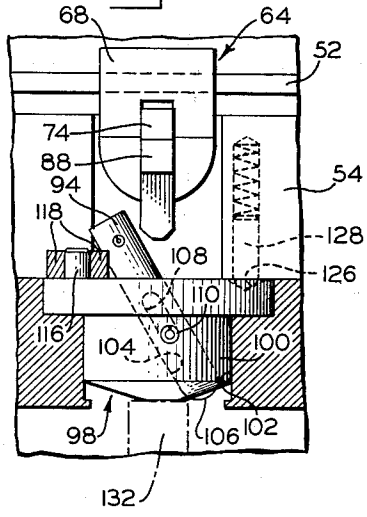


Fig. 9

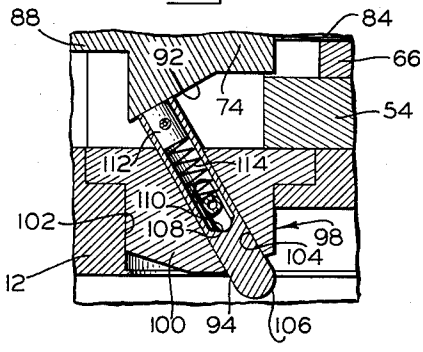


Fig. 10

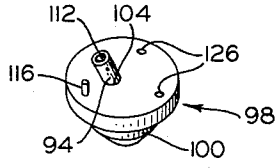
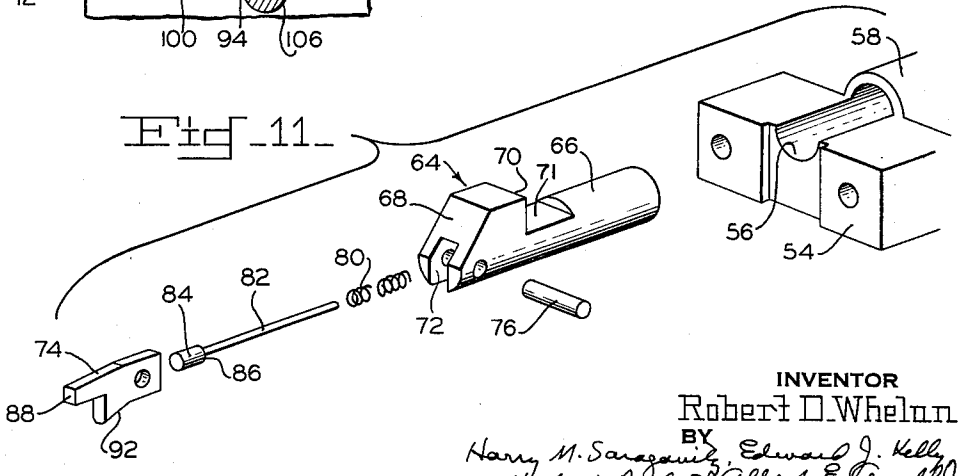


Fig. 11



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United States Patent Office 3,251,269
Patented May 17, 1966

3,251,269

FIREARM WITH BOLT ACTUATED FIRE CONTROL MECHANISM

Robert D. Whelan, West Springfield, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 23, 1964, Ser. No. 398,817
6 Claims. (Cl. 89—140)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

This invention relates to semiautomatic guns with automatic fire capability and is more particularly directed to improved means for rapidly converting the gun from one type of fire to the other.

In order to conserve the expenditure of ammunition during the firing of relatively large caliber guns for military purposes, an auxiliary gun of much smaller caliber is mounted in firing alignment with the larger caliber gun and is utilized to establish the aiming point of the latter in a manner which will substantially increase the probability of hitting the target with the first shot fired. The smaller caliber gun, commonly referred to as a "spotting rifle," must be capable of extremely accurate fire and, therefore, is generally limited to semiautomatic operation wherein each shot requires separate activation of the trigger.

However, in many instances in which the target is moving at a relatively high speed, the trigger cannot be activated with sufficient rapidity to provide enough shots to catch up to the target so that the first shot fired from the larger caliber gun will insure a hit. Accordingly, it has been found necessary to provide semiautomatic spotting rifles with the ability to fire automatically in relatively short bursts. While the prior art contains many fire control mechanisms capable of providing either type of fire at the selection of the operator of the gun, the increased complexity required by these dual-fire designs introduces a much higher incidence of malfunction into the firing operation thereof.

This is especially true in those firing mechanisms in which a single sear is utilized to hold a pivotal hammer in the cocked position and semiautomatic fire is achieved by interrupting the mechanical connection between the trigger and the sear immediately following the release of the hammer so that the sear will be autotmatically repositioned to engage the hammer during the subsequent recoil of the bolt thereby requiring that the trigger be returned to the pre-fired position thereof before a second shot can be fired. In this type of firing mechanism, the actuation of the trigger is generally imparted to the sear through a disconnector pivotally mounted therebetween. Automatic fire is achieved by positioning a manually actuated selector to limit the firing travel of the trigger or the disconnector in a manner which will maintain the coextensive engagement therebetween as long as the trigger is held in the fired position thereof.

Although the foregoing type of fire control mechanism has been successfully incorporated into a spotting gun, considerable difficulty has been encountered in the establishment of permissible tolerances for the various components of the firing mechanisms. These tolerances must be sufficiently narrow to provide for the anticipated effect of the vibration to which the moving parts are subjected during automatic fire of the gun as well as the accumulative effects of the wear incurred at the various areas of contact between the moving parts. At the same time, the dimensional tolerances applied to these parts must possess sufficient latitude to permit unrestricted interchangeability when replacement of any part is required.

The difficulties involved in establishing optimum dimensional tolerances are, of course, substantially increased by the addition of a disconnector and a selector to the number of components normally utilized to provide semiautomatic fire in a gun requiring extreme accuracy of fire. The problem is further complicated in those firing mechanisms wherein the disconnector must be actuated to a greater extent or in a different path for semiautomatic fire than for automatic fire. In this situation, the selector utilized to control the movement of the disconnector must do so in an extremely accurate and positive manner in order to prevent any accidental overlapping between the semiautomatic and automatic functioning of the gun. However, extensive experimentation with this type of semiautomatic and automatic firing mechanism has indicated that a conventional slidable or rotatable selector will not vary the functioning of the disconnector with the required repetitive accuracy.

Accordingly, it is a general object of this invention to provide a semiautomatic spotting gun with automatic fire capability without introducing any significant reduction in the interchangeability of the particular components which form a part of the firing mechanism.

It is a further object of this invention to provide a spotting gun as aforesaid with a fire control mechanism wherein a pivotal disconnector is utilized to transmit the actuation of the trigger to a hammer-retaining sear such that the function of the disconnector in this respect will be substantially the same in both semiautomatic and automatic fire.

Another object of the present invention is to provide a fire control mechanism, as aforesaid, wherein the interruption in the firing contact between the trigger and disconnector required for semiautomatic fire is achieved independently of the actuation of the trigger.

Still another object of the present invention lies in the provision of improved means for actuating the disconnector in a firing mechanism of the aforesaid type in a manner which will compensate for any variation in the relative position of the components thereof which may be incurred in converting from automatic to semiautomatic fire.

An additional object of this invention is to provide an improved selector mechanism for converting a spotting gun, as aforesaid, between semiautomatic and automatic operation without the necessity for direct contact with either the trigger or the disconnector.

A final object of this invention is to provide a fire control mechanism for imparting automatic fire capability to a semiautomatic gun in a positive and reliable manner with a minimum of additional parts.

It has been found that the foregoing objects can be achieved with a firing mechanism in which the means for interrupting the train of connection between the trigger and the sear in order to provide semiautomatic fire is operated by a suitable cam on the bolt and is, therefore, completely independent of the firing movement of the trigger. In order to obtain this desirable mode of operation, the firing mechanism essentially comprises a pivotal hammer adapted to be retained in the cocked position thereof by engagement with the front end of a longitudinal sear slidably mounted in the receiver. The opposite and rear end of the sear is adapted to pivotally receive the lower end of a yoke which is in turn pivotally secured to the receiver so as to form a bridge across the top thereof. A disconnector is pivotally mounted to the rear end of a longitudinally slidable actuator disposed immediately to the rear of the sear yoke. When the trigger is advanced to impart longitudinal movement to the disconnector and thereby to the actuator, the latter will pivot the sear yoke so that the lower end thereof will retract the sear out of cocking engagement with the hammer.

In automatic fire, the disconnector keeps the actuator in contact with the sear yoke so that the sear will be held out of cocking engagement with the hammer as long as the trigger is maintained in the fired position thereof.

However, in semiautomatic fire, the connection produced between the trigger and the sear yoke by the disconnector is interrupted by a spring-biased plunger disposed beneath the disconnector and adapted to impart pivotal movement thereto in response to a cam surface at the top of the recoiling bolt. This upward movement of the plunger pivots the disconnector so that a rearwardly projecting finger thereon will be lifted out of direct contact with the forward end of the trigger thereby permitting suitable spring means to automatically return the sear and sear yoke to the prefired positions thereof for cocking engagement of the latter with the hammer at the conclusion of the recoil travel of the bolt. Thus, the firing of the next shot requires that the trigger be released and reactuated in order to contact the disconnector and advance the actuator to pivot the sear yoke. The necessary selectivity of operation is accomplished by mounting the plunger in a turntable adapted to be rotated between two predetermined positions by a transversely slidable selector. In semiautomatic fire, the turntable is positioned so that the plunger is disposed directly beneath the disconnector to project into the recoil path of the bolt. In automatic fire, the turntable is positioned so that the plunger is offset relative to the underside of the disconnector and, consequently, will not project into the recoil path of the bolt. As a result, the disconnector will not interrupt the necessary connection between the trigger and sear yoke as long as the former is retained in the fired position.

Further objects and advantages of the invention will be apparent from the following specification and the accompanying drawings which are for the purpose of illustration only and in which:

FIG. 1 is an elevational partial view of the rear portion of the gun with the receiver broken away to show the parts of the firing mechanism in the position for semiautomatic fire prior to the actuation of the trigger, the sear being omitted for clarity of illustration;

FIG. 2 is a top view of the portion of the gun shown in FIG. 1 but with the parts of the firing mechanism in the fired position thereof prior to recoil of the bolt;

FIG. 3 is a section taken along line 3—3 in FIG. 2 to show the relationship between the parts of the firing mechanism;

FIG. 4 is a view similar to FIG. 3 but showing the parts in the position assumed thereby following the pivotal movement imparted to the disconnector by the upward movement of the angularly disposed plunger in response to contact by the inclined ramp on the top of the recoiling bolt;

FIG. 5 is a sectional view taken along line 5—5 in FIG. 4 to show the configuration of the sear yoke and the manner in which the sear is connected thereto;

FIG. 6 is an enlarged sectional view taken along line 6—6 in FIG. 5 to show the hammer in cocking engagement with the sear;

FIG. 7 is a sectional view taken along line 7—7 in FIG. 3 on an enlarged scale with the disconnector and turntable shown in full and in the position wherein the angular plunger is oriented to contact the underside of the disconnector during semiautomatic fire;

FIG. 8 is a view similar to FIG. 7 but showing the angular plunger rotated substantially 90° to the position required for full auotomatic fire;

FIG. 9 is a sectional view taken along line 9—9 in FIG. 7 to show the interior of the angular plunger;

FIG. 10 is a perspective view of the turntable on a reduced scale; and

FIG. 11 is a perspective, exploded view of the disconnector assembly.

As shown in the drawings, the spotting gun which incorporates the present invention is provided with a receiver 12 in which a bolt 14 is slidably housed for recoil and counterrecoil movement. A firing pin 16 is slidably seated in bolt 14 to protrude from the rear end thereof in position to be driven forwardly by a hammer 18 pivotally mounted on a vertical pin 20 fixed in the floor of receiver 12 and responsive to the forward bias of a spring 22. Upon completion of the firing movement of hammer 18, the free end thereof is disposed in the recoil path of bolt 14 in position to be pivoted thereby into cocking engagement with a sear 24 slidably disposed in receiver 12 adjacent the sidewall thereof.

As best shown in FIG. 6, sear 24 is an elongated bar-shaped member with a forwardly projecting nose 26 designed to engage with a rearwardly extending shoulder 28 on hammer 18 in order to block the firing movement thereof. A spring 30 is seated in a longitudinal hole 32 in sear 24 and is retained therein by a plunger 34 slidably disposed in hole 32 in rearward abutment with a pin 36 extending transversely through a dished recess 38 in the side of sear 24 into fixed engagement in receiver 12. In addition, plunger 34 is recessed along the side thereof, as indicated at 40, to provide access for the projecting periphery of a stop pin 42 fixedly secured in sear 24 in partial intersection with hole 32. This arrangement permits sear 24 to be retracted for a distance equivalent to the length of recess 40 against the bias of spring 30 and upon the release of sear 24 assures a return to the original prefired position thereof.

The outer side of sear 24 adjacent the rear end thereof is vertically slotted as at 44 to receive the protruding end of a cylindrical stud 46 rotatably mounted in the longer side of a yoke 48 which, as best shown in FIG. 5, is in turn pivotally secured to the opposite ends of an elongated pin 50 extending tranversely through receiver 12. Yoke 48 is formed as a strap which extends across the top of receiver 12 and is centrally elevated, as indicated at 52, to clear a rectangular block 54 secured to the top of receiver 12. Thus, when yoke 48 is pivoted in the clockwise direction, as shown in FIG. 3, sear 24 is correspondingly retracted thereby to release hammer 18 for impact with firing pin 16.

As best shown at 56 in FIG. 11, block 54 is centrally channeled along the top thereof and is forwardly extended to form a tubular housing 58 which terminates at a point spaced to the rear of a vertical plate 60 projecting upwardly from receiver 12 for utilization as the rear end wall of the cartridge feedway 62 therein. An actuator 64 having a generally cylindrical body 66 is slidably seated in channel 56 so as to extend into housing 58. At the rearward end of body 66, actuator 64 is provided with an upwardly projecting portion 68 forming a forwardly facing surface 70 disposed for contact with the rear edge of the centrally elevated portion 52 of sear yoke 48. The height of surface 70 is additionally increased by a transverse cut across the top of body 66 as indicated at 71. Rearwardly of upwardly projecting portion 68, actuator 64 is slotted to form a bifurcated section 72 for receiving the forward end of a disconnector 74 pivotally connected thereto as by a transverse pin 76.

A central bore 78 extends through body 66 of actuator 64 forwardly of bifurcated end 72 to receive a spring 80 and a guide rod 82 therefor. The forward end of spring 80 projects from bore 78 to bear against vertical plate 60. The rear end of spring 80 is seated against an annular shoulder 84 formed by an increase in diameter at the rear end of guide rod 82 as indicated at 86. Since this enlarged diameter end 86 of guide rod 82 bears directly against the forward edge of disconnector 74, any forward movement imparted to the latter will compress spring 80 accordingly and thereby ensure the return of disconnector 74 to the original position thereof.

Disconnector 74 is formed with a rearwardly projecting finger 88 adapted to lie in axial alignment with a longitudinal trigger plunger 90. An angular surface 92

on the underside of disconnector **74** is adapted to be contacted by the upper end of a tubular plunger **94** in a manner to be hereinafter described. Although trigger plunger **90** may be actuated by any manual device capable of imparting thereto the forward movement required to advance actuator **64** to the extent necessary to pivot sear yoke **48** for retracting sear **24** out of cocking engagement with hammer **18**, such actuation may also be accomplished by electrical means such as a solenoid **96** suitably mounted to the top of receiver **12**.

A circular turntable **98** with a parabolic stem **100** depending therefrom is rotatably seated in a socket **102** formed in the top of receiver **12** and is retained in place by the overlapping position of rectangular block **54**. As best shown in FIG. 9, tubular plunger **94** is slidably disposed in a hole **104** extending completely through turntable **98** at an acute angle to the circular top surface thereof. Plunger **94** terminates in an arcuate lower end **106** and is also provided with a vertical slot **108** extending transversely therethrough for the passage of a roll pin **110** whose ends are fixedly secured in turntable stem **100**. A plug **112** is fixedly pinned in the upper end of plunger **94** and a spring **114** is seated between plug **112** and roll pin **110** to normally bias plunger **94** upwardly. However, the lower end of plunger **94** is adapted to project sufficiently from the underside of stem **100** for a purpose to be shown.

Extending upwardly from the top of turntable **98** and adjacent the outer periphery thereof is a vertical pin **116** which is engageable between a pair of spaced fingers **118** projecting from the side of a selector **120** slidably disposed in a transverse slot **122** in the top of receiver **12** located rearwardly of turntable socket **102** therein. Selector **120** is in the form of a bar with an upwardly projecting fingerpiece **124** at both ends thereof. A pair of radially located indentations **126** spaced apart by 90° are provided in the top of turntable **98** to receive the lower end of a spring-biased detent **128** vertically disposed in rectangular block **54** and thereby limit the extent of the rotation imparted to turntable **98** by manual actuation of selector **120** in either direction. When turntable **98** is halted in one direction of rotation, plunger **94** is positioned directly beneath angular surface **92** on the underside of disconnector **74** as shown in FIG. 7. When halted at the conclusion of rotation in the opposite direction, however, turntable **98** positions plunger **94** out of alignment with the underside of disconnector **74** as shown in FIG. 8.

Thus, when selector **120** is manually actuated to the position in which turntable **98** is rotated to bring plunger **94** directly beneath angular surface **92** on the underside of disconnector **74**, as shown in FIGS. 1 and 9, the gun is set for semiautomatic fire. Energization of solenoid **96** will, therefore, advance trigger plunger **90** into contact with the rear end of finger **88** to force disconnector **74** forwardly, as best shown in FIG. 3, against the bias of spring **80**. This forward movement of disconnector **74** is, of course, correspondingly transmitted to actuator **64** and thereby to sear yoke **48**. The resulting clockwise pivotal movement imparted to sear yoke **48** retracts sear **24** to withdraw nose **26** thereon out of engagement with shoulder **28** on hammer **18**. The bias of spring **22** will thereupon actuate hammer **18** into firing impact with the rear end of firing pin **16**.

During the forward advance of disconnector **74**, plunger **94** is slightly depressed thereby to increase the projection thereof from the underside of turntable stem **100** into the recoil path of an upwardly inclined ramp surface **130** formed by a rammer **132** projecting resiliently from the top of bolt **14** at the forward end thereof. Thus, as bolt **14** approaches the end of recoil movement, ramp **130** cams plunger **94** upwardly to pivot disconnector **74** about pin **76** and lift finger **88** thereon out of contact with the front face of trigger plunger **90**. Thereupon, the bias of spring **80** forces disconnector **74** rearwardly so that finger **88** thereon rides over trigger plunger **90** as best shown in FIG. 4. Since disconnector **74** is pivotally secured to actuator **64**, the latter will also be returned to the prefired position thereof. Thereupon, sear yoke **48** and sear **24** are both free to return to the prefired positions thereof in response to the forward bias of sear spring **30**. In this position of sear **24**, nose **26** thereon lies in the path of hammer shoulder **28** as hammer **18** is pivoted to the rear by the recoil movement of bolt **14**. However, as the rear edge of hammer shoulder **28** contacts the inclined surface of sear nose **26**, sear **24** is forced rearwardly against the bias of spring **30** to permit the uninterrupted movement of hammer to the cocked position. At this point, sear spring **30** immediately advances sear **24** over the top of hammer shoulder **28** to retain hammer **18** in the cocked position while bolt **14** returns to battery.

In order to fire the next shot, the solenoid **96** must be deenergized to permit trigger plunger **90** to return to the prefired position out of engagement with the underside of disconnector finger **88**. Thereupon, spring **80** returns disconnector **74** to the unpivoted as well as the prefired position thereof so that the subsequent advance of trigger plunger **90** will initiate another firing cycle in the manner hereinbefore described.

When automatic fire is desired, selector **120** is manually changed to the opposite end of transverse slot **122**. During this movement of selector **120**, the engagement between detent **128** and one of indentations **126** in the top of turntable **98** is transferred to the other indentation as turntable **98** is rotated about the vertical axis thereof. At the conclusion of the rotation imparted to turntable **98**, tubular plunger **94** will no longer be disposed in position to be cammed upwardly by ramp **130** on rammer **132** at the forward end of bolt **14**. Thus, no pivotal movement will be imparted to disconnector **74** which will therefore continue as a connection between trigger plunger **90** and actuator **64** so that sear yoke **48** will be retained in the pivoted position thereof as long as solenoid is energized. Sear **24** will, therefore, be held to the rear out of engagement with hammer **18** so that cocking retention thereof is accomplished by a secondary sear (not shown) which is automatically released upon movement of bolt **14** into battery position. Consequently, the gun will fire automatically as long as solenoid **96** is energized and ammunition is fed into feedway **62**.

Inasmuch as the manipulation of selector **120** and the consequent rotation of turntable **98** does not introduce any change in position of the trigger or the disconnector and sear components of the firing mechanism or even require any direct contact therewith, the addition of the selector mechanism to the gun will not result in any corresponding reduction in the dimensional tolerances of the components required to transmit the firing actuation of the trigger to the firing pin. This is a highly desirable improvement over conventional fire control mechanisms in which the selector changes the position or function of one or more of the components and, consequently, requires some reduction in the maximum permissible tolerances thereof in order to prevent any increase in the malfunction rate.

Another factor contributing to the ease of tolerance maintenance in the firing mechanism of the present invention is the utilization of a disconnector which, in semiautomatic fire, is adapted to be pivoted out of firing contact with the trigger by a member responsive only to a suitable cam surface on the recoiling bolt. Such arrangement isolates this portion of disconnector movement from that of the trigger, and consequently, does not require any critical limitation on the movement of the trigger or the disconnector which might be adversely affected by any change in tolerance due to wear or part replacement.

The permissible tolerances of the various components which constitute the firing mechanism of the present

invention are even further increased by the utilization of a resiliently mounted plunger for imparting pivotal movement to the disconnector in semiautomatic fire. The resilient mounting of the plunger permits sufficient overtravel thereof to compensate for any variation in the position of the disconnector due to excessive wear or replacement of any of the parts in the firing mechanism.

The present invention has been described in detail above for the purpose of illustration only and is not intended to be limited by this description or otherwise except as defined by the scope of the appended claims.

I claim:

1. In a firearm having a receiver and a bolt slidably disposed therein for longitudinal reciprocation to and from battery position, firing mechanism adapted for conversion between semiautomatic and automatic operation and comprising, a firing pin slidably disposed in the bolt to project from the rear end thereof, a hammer pivotally mounted in the receiver for impact with the projecting end of said firing pin, a retractable sear for retaining said hammer in a cocked position, a sear release pivotally mounted on the receiver for retracting said sear out of cocking engagement with said hammer, an actuator slidably disposed in the receiver for contact with said sear release, a disconnector pivotally secured to the rear end of said actuator for transmitting the firing movement of said trigger thereto, a turntable rotatably mounted in the receiver below said disconnector, a plunger slidably mounted in said turntable, and selector means for rotating said turntable in one direction to position said plunger in the recoil path of the bolt and in vertical alignment with said disconnector whereby the latter is pivoted during each cycle of bolt operation to provide semiautomatic fire by interrupting the retention of said sear out of cocking engagement with said hammer and for rotating said turntable in the opposite direction to position said plunger out of the recoil path of the bolt whereby said sear is held out of cocking engagement with said hammer to provide automatic fire as long as said trigger is retained in the firing position thereof.

2. The combination defined in claim 1 wherein said selector means comprises a vertical pin fixed in the top of said turntable adjacent the circumferential periphery thereof, a selector bar transversely slidable in the receiver, a pair of spaced fingers projecting from the side of said selector bar to straddle said turntable pin, and a fingerpiece on both ends of said selector bar whereby manual actuation thereof in either direction imparts corresponding rotation to said turntable.

3. In a firearm having a receiver, a bolt slidably disposed therein for longitudinal reciprocation to and from battery position, a firing pin slidably disposed in the bolt to project from the rear end thereof, a hammer pivotally mounted in the receiver for impact with the projecting end of the firing pin, a retractable sear for retaining the hammer in a cocked position, a slidable trigger, and means for selectively converting the firing movement of the trigger into semiautomatic or automatic release of the hammer comprising, a sear yoke pivotally secured to the sides of the receiver to form a bridge across the top thereof, means for pivotally connecting the lower end of said sear yoke to the rear end of the sear, an actuator slidably seated in the top of the receiver behind said bridge on said sear yoke, a disconnector pivotally secured to the rear end of said actuator in the firing path of the trigger, a plunger slidably disposed below said disconnector, and means for positioning said plunger into and out of the recoil path of the bolt whereby semiautomatic fire is effected whenever said plunger is positioned to be lifted by the bolt into contact with said disconnector for imparting pivotal movement thereto out of firing engagement with the trigger.

4. The combination defined in claim 3 wherein said means for positioning said plunger into and out of the recoil path of the bolt comprises a turntable rotatably seated in the receiver below said disconnector for mounting said plunger, spring means normally urging said plunger to project from the top of said turntable, a vertical pin fixed on the top of said turntable adjacent the outer periphery thereof, a selector bar slidably mounted in the receiver for transverse movement rearwardly of said turntable, a pair of spaced fingers projecting from the side of said selector bar to straddle said vertical pin in said turntable whereby manual actuation of said bar is converted into corresponding rotation of said turntable and said plunger therein.

5. In a firearm having a receiver, a bolt slidably disposed therein for longitudinal reciprocation to and from battery position, a firing pin slidably disposed in said bolt to project from the rear end thereof, a hammer pivotally mounted in the receiver for impact with the projecting end of said firing pin, a retractable sear, a spring normally urging said sear into cocking engagement with said hammer, a yoke pivotally secured to the sides of the receiver to form a bridge across the top thereof, said yoke being pivotally connected at the lower end thereof to the rear end of said sear, an actuator slidably disposed in the top of the receiver for imparting pivotal movement to said sear yoke, a disconnector pivotally secured to the rear end of said actuator, spring means normally urging said actuator and said disconnector to the rear, a trigger slidably mounted on the receiver for imparting forward movement to said disconnector and thereby to said actuator for pivoting said sear yoke, a turntable rotatably disposed in the receiver below said disconnector, a plunger slidably mounted in said turntable to protrude from either end thereof, and selector means engageable with said turntable for imparting rotation thereto in opposite directions whereby the firearm is adapted for semiautomatic fire when said plunger is positioned to depend into the recoil path of said bolt for actuation thereby against said disconnector to interrupt the firing contact thereof with said trigger and is adapted for automatic fire when said plunger is positioned out of the recoil path of said bolt.

6. The combination defined in claim 5 wherein said disconnector is provided with a rearwardly extending finger adapted to be contacted by the front end of said trigger and to ride thereover in response to said spring means acting on said actuator as said disconnector is pivoted by the upward movement imparted to said plunger by the recoil movement of said bolt whereby said trigger must be released and reactivated in order to fire the next shot.

References Cited by the Examiner

FOREIGN PATENTS

745,556 5/1933 France.

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