

Oct. 13, 1964

D. W. CHARRON

3,152,418

SINGLE OR DOUBLE ACTION FIREARM

Filed March 9, 1962

2 Sheets-Sheet 1

Fig. 1

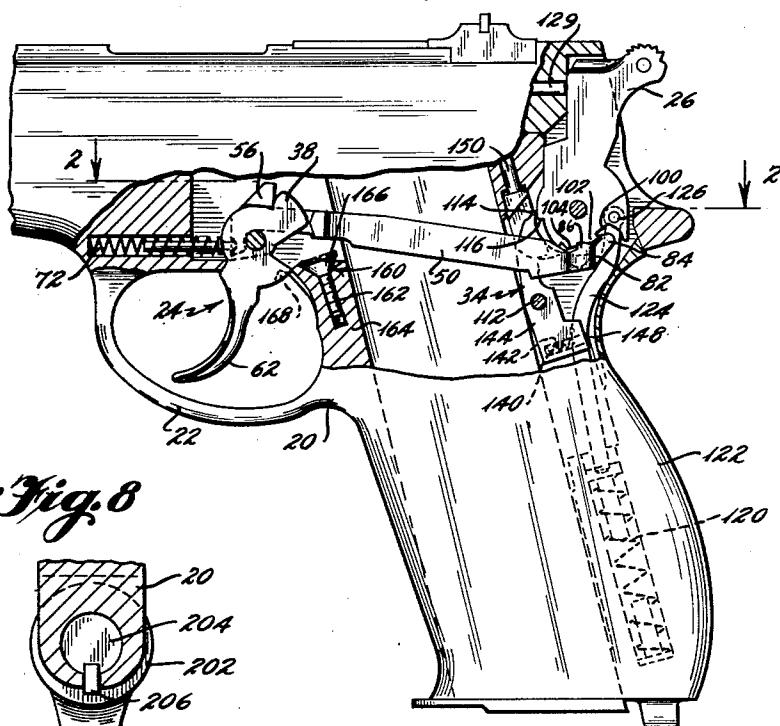


Fig. 8

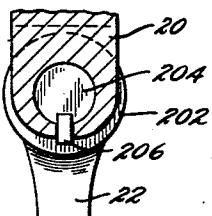


Fig. 2

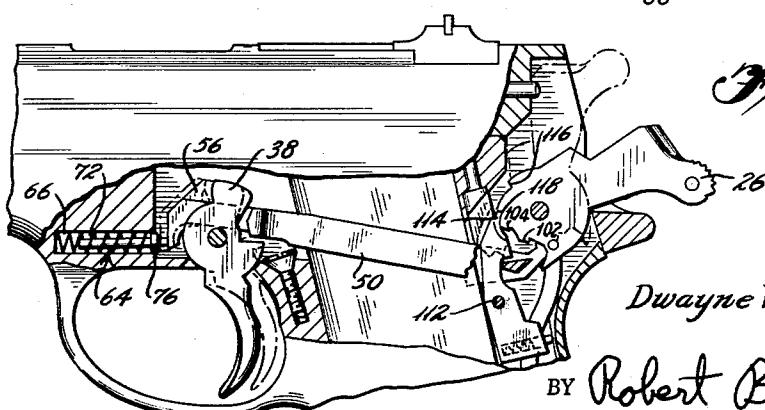
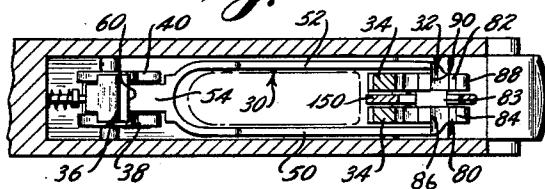


Fig. 3

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2 Sheets-Sheet 2

Fig. 4

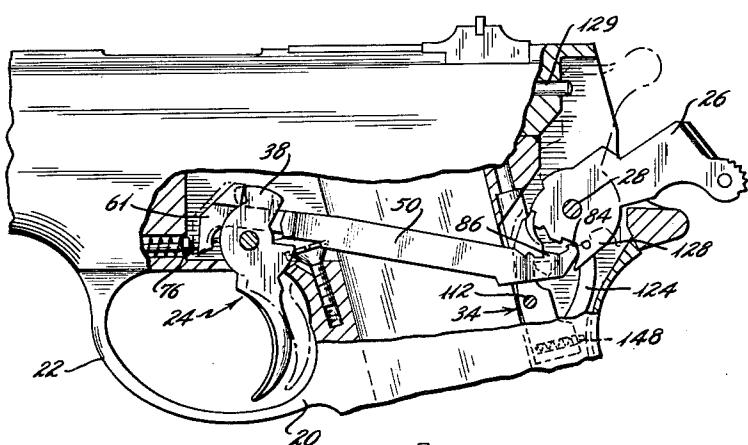


Fig. 5

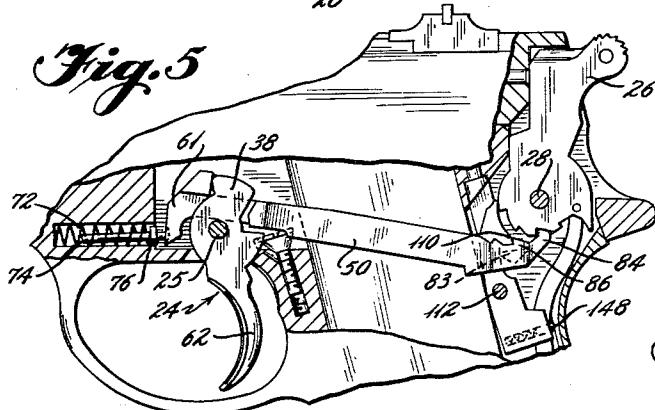
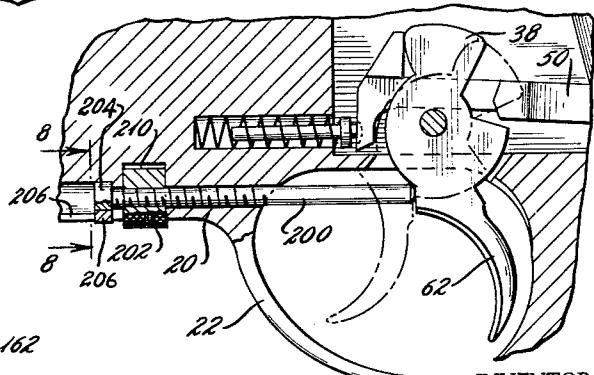
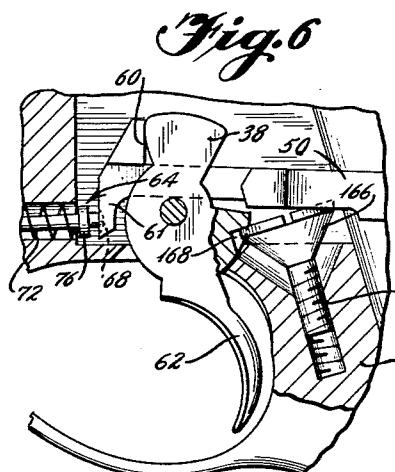


Fig. 7



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3,152,418

SINGLE OR DOUBLE ACTION FIREARM
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4 Claims. (Cl. 42—69)

The present invention relates to firearms. More particularly, this invention provides a firearm that is readily adjustable to different modes of operation to be accommodated to various uses, and to the desires of various shooters.

Heretofore, single acting and double acting pistols have been provided. In single acting pistols, the hammer must be cocked manually or by a recoiling slide or breech block. On the other hand, in double acting pistols, the hammer is cocked, and released for firing, by one continuous pull of the trigger.

In such prior firearms, a spring yieldably urges the trigger to a forward position. In pulling the trigger to the rear, during the firing of the weapon, it is necessary to take up or traverse a substantial slack or forelash of trigger movement before the hammer is released to fire the weapon. When the firearm is used for target shooting, such a long take-up is neither necessary nor desirable because it tends to disturb the aim.

The present invention resides in the concept of a firearm constructed with a convenient adjustment to provide selectively either single-action or double-action. The adjustment also changes the amount of trigger stroke, pull, or take-up required before the hammer is released to fire the weapon.

Thus, it is an object of the invention to provide a pistol that can be adjusted to either single action or double action and thereby provide a weapon suitable for various uses.

It is a further object of the invention to provide an adjustment for a firearm whereby the amount of trigger pull or stroke can be changed, as from a long stroke to the short stroke desired for target shooting.

For a better understanding of the invention and its other objects, advantages and details, reference is now made to the presently preferred embodiments of the invention which are shown, for purposes of illustration only, in the accompanying drawings.

In the drawings:

FIGURE 1 is a fragmentary side elevational view, with parts broken away, of a pistol according to the invention, showing the parts adjusted for double action;

FIGURE 2 is a horizontal section approximately on the line 2—2 in FIGURE 1;

FIGURE 3 is a view similar to FIGURE 1 showing the firing of the pistol;

FIGURE 4 is a view similar to FIGURE 1 showing the pistol adjusted for single action and cocked;

FIGURE 5 is a fragmentary side elevational view of the pistol, adjusted for single action as shown in FIGURE 4, before cocking;

FIGURE 6 is an enlarged fragmentary view of the trigger, adjustment screw, and a portion of the drawbar of the pistol adjusted for single action as in FIGURES 4 and 5;

FIGURE 7 is an enlarged fragmentary view of a modified form of the invention wherein a rod engages the lower portion of the trigger and showing, in full lines, the pistol adjusted for single action; and in dot-dash lines, the pistol adjusted for double-action; and,

FIGURE 8 is an enlarged sectional view on the line 8—8 of FIGURE 7.

Briefly stated, the semi-automatic or autoloading pistol of the invention illustrated in FIGURE S 1 to 6 includes

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the conventional frame, trigger, hammer and drawbar operatively connecting the upper portion of the trigger with the hammer. The rear end of the drawbar has hooks formed thereon for engaging similar hooks or shoulders formed on the lower portion of the hammer, whereby when the pistol is adjusted for double action, a pull on the trigger causes the drawbar to pivot the hammer to cocked position.

The drawbar also has formed thereon forward hooks located to engage the sear and move the sear out of cocking engagement with the hammer, thereby permitting the cocked hammer to be moved, by the mainspring, to strike the firing pin and fire the pistol. This prior structure is as illustrated and described in United States Letters Patent No. 2,846,925 to Joseph W. Norman.

For adjusting the pistol to single or double action, and changing the trigger stroke, an adjustment screw is provided in the frame adjacent the rear of the trigger. When the adjustment screw is screwed to its innermost position, the trigger. This spring is the drawbar plunger position by a spring. This spring is the drawbar plunger spring that urges rearwardly the drawbar plunger that bears on the drawbar and, in turn, urges it rearwardly to a position where the hooks on the drawbar can engage and cock the hammer. The drawbar engages the upper lever arm of the trigger so as to pivot the lower, finger-engageable lever arm of the trigger to its forwardmost position.

To shorten the trigger stroke or adjust the pistol for single action, the adjustment screw is screwed outwardly to engage a notch in the trigger and limit the movement of the trigger and its connected drawbar so that the hooks on the rear end of the drawbar cannot engage the mating hooks or shoulders on the hammer. Thus, when the trigger is pulled, the drawbar cannot cock the hammer; but can only engage the sear to release the cocked hammer. In this case, the hammer must be cocked manually, or automatically when the slide recoils after each shot.

In FIGURES 7 and 8, an alternative embodiment is shown wherein a rod extends through the frame forwardly of the trigger to engage the trigger and limit its movement, so as to adjust the firearm to either single-action or double-action and to change the length of the trigger stroke. The rod is reciprocably adjusted by a nut positioned in a slot in the frame and threadedly engaging the rod.

The embodiment of the invention shown in FIGURES 1 to 6 includes a frame 20, a trigger guard 22 joined to the frame and extending around a trigger 24 pivotally mounted on a trigger pin 25 rotatably supported in the frame 20. A drawbar or trigger bar 30 has its rear end 32 engageable with both the hammer 26 and the sear 34 and its front end 36 engaging the upper lever arms 38 and 40 of the trigger 24.

The drawbar 30 includes a loop-shaped portion comprising two side arms 50 and 52 connecting the rear end 32 to the front end 36. The front end comprises a neck 54 and a head 56 formed above and at the front of the neck 54. The head 56 extends outwardly, as seen in FIGURE 2, on both sides of the neck 54. The upper lever arms 38 and 40 of the trigger 24 are positioned, as seen in FIGURE 2, on opposite sides of the drawbar neck 54 and engage the rear surface 60 of the head 56. The drawbar 30 also includes a flange portion 61 extending downwardly from head 56.

For returning the lower, finger-engageable lever arm 62 of the trigger 24 to its forward position after each shot, a drawbar plunger 64 is received in a hole 66 formed in frame 20. The drawbar plunger 64 includes a point 68 received in a groove 70 in the flange portion 61 of drawbar 30. A helical compression drawbar plunger spring 72 surrounds the shank 74 of the draw-

bar plunger 64 and engages an annular flange 76 formed on the drawbar plunger. The drawbar plunger spring 72 yieldably urges the drawbar plunger 64 rearwardly. The drawbar plunger 64 urges rearwardly the drawbar 30 having surface 60 engaging upper trigger lever arms 38 and 40 and tending to pivot the trigger 24 clockwise, as seen in FIGURES 1 and 3 to 7, and to move the lower trigger lever arm 62 to its forwardmost position.

For cocking the hammer 26 in double action, the rear end 36 of the drawbar is provided with opposite ears 80 and 82 connected by a crossbar 83. Ear 80 is shaped to form a rear hook 84 and a forward hook 86. As seen in FIGURE 2, the ear 82 is similarly shaped to form a rear hook 88 and a forward hook 90. The rear drawbar hooks 84 and 88 can enter a notch 100 on the lower surface of the hammer 26 and engage hook 102 on the hammer. The forward drawbar hooks 86 and 90 can engage hook 104 formed on the lower surface of hammer 26.

The forward drawbar hooks 86 and 90 also function to engage surface 110 (FIGURE 5) on the sear to pivot the sear 34 counterclockwise, as seen in FIGURE 3, around sear pin 112 mounted in frame 20, to disengage the upper sear nose 114 from either the half cock shoulder 116 or the full cock shoulder 118 of the hammer 26 and release the hammer 26.

For pivoting the hammer from cocked to firing positions, a compression mainspring 120 is received in rear frame portion 122. The mainspring 120 urges upwardly the movable stirrup 124 having its upper end pivotally connected by a pin 126 to the portion 128 of hammer 26. The hammer 26 engages firing pin 129 which strikes a cartridge (not shown) to fire the pistol in a conventional manner.

For urging the sear 34 to cocking position, a compression sear plunger spring 140 is received in a hole 142 in the lower lever arm 144 of sear 34. The spring 140 urges a movable sear plunger 146 against frame surface 148, thus tending to pivot the sear in a clockwise manner, so that, when the hammer 26 is drawn back, the sear nose 114 will engage either the half cock shoulder 116, or the full cock shoulder 118 of the hammer 26, as shown in full lines in FIGURE 3.

The sear is bifurcated, as seen in FIGURE 2, to receive a disconnector 150, not forming a part of this invention and described in United States Letters Patent No. 2,846,925 to Joseph W. Norman.

In order to adjust the pistol from double-action to single-action, and change the trigger stroke or take-up, an adjustment stop screw 160 has a threaded shank 162 received in a hole in frame portion 164 just to the rear of the trigger 24. The adjustment screw has a beveled head 166 which, when the adjustment screw is screwed to its upper or outward position, as illustrated in FIGURES 4 to 6, engages a groove or notch 168 formed in the trigger 24.

In FIGURES 1 to 3, the adjustment screw 160 is screwed down to its innermost position so that the drawbar plunger spring 72 can urge the drawbar 30 rearwardly and, by engagement of head 56 with upper trigger lever arms 38 and 40, pivot lower lever arm 62 of the trigger to the forwardmost position illustrated in FIGURE 1, whereby the pistol is operated double-action.

The operation of the pistol at the double action adjustment shown in FIGURES 1 to 3 will now be described. The shooter pulls the trigger lever arm 62 of the trigger rearwardly so that the upper trigger lever arms 38 and 40 engage the drawbar head 56, pulling the drawbar 30 forwardly and compressing the drawbar plunger spring 72. As the drawbar moves forwardly, the rear drawbar hooks 84 and 88 engage the hammer hook 102, and the forward drawbar hooks 86 and 100 engage hammer hook 104, thereby pivoting the hammer to the cocked position shown in full lines in FIGURE 3, lowering stirrup 124, and compressing mainspring 120.

Further pulling of the lower trigger lever arm 62 rearwardly causes the drawbar hooks 84, 86, 88 and 100 to disengage from the hammer. As the drawbar 30 moves forwardly, the forward drawbar hooks 86 and 100 engage sear surface 110 and pivot the sear to release the sear nose from the hammer shoulder 118. Thereafter, the mainspring 120 moves the stirrup 124 upwardly to pivot the hammer 26 from the cocked position shown in full lines in FIGURE 3 to the firing position shown in dot-dash lines in FIGURE 3, striking the firing pin 29 that moves forwardly to fire a cartridge (not shown).

In order to change the operation of the pistol to single action, and/or to decrease the amount of take-up in the trigger stroke, the adjustment screw 160 is screwed outwardly, as to the position shown in FIGURES 4 to 6 where the head 166 of the screw 160 engages the notch 168 in the trigger 24. The lower lever arm 62 of the trigger 24 thus can move forwardly only to the position shown in full lines in FIGURES 4 to 6. As a result, the drawbar 30 does not move rearwardly so that the hooks 84, 86, 88 and 100 can engage the hooks 102 and 104 on the hammer 26. Thus, the forelash of the trigger is substantially eliminated and a relatively short stroke of the trigger is required to fire the weapon.

A trigger stroke can thus be provided that is just long enough so that the sear nose 114 can move in and out of engagement with hammer shoulders 116 and 118. The firearm must be cocked by manually drawing the hammer 26 back or by the automatic drawing back of the hammer occurring when the slide recoils after each shot.

The adjustment screw 160 can be adjusted to various intermediate positions to provide take-ups of the trigger 24 to suit the desires of the individual shooter.

FIGURES 7 and 8 illustrate an alternative embodiment of the invention wherein like parts have similar reference numerals. This embodiment differs in that the stroke of the lower trigger lever arm 62 is limited by a rod 200 having its forward portion slidably received in a hole in frame 20. A nut 202 is threadedly received on the threaded portion of rod 200. The rod has an enlarged head 204. In order to prevent rotation of rod 200, a frame portion 206 is slidably received in a slot formed in the lower portion of head 204. The nut 202 is rotatably received in a slot 210 formed in the frame 20. By rotation of the nut 202, the rod 200 can be moved to the full line position shown in FIGURE 7, for single action fire and a short take-up on the trigger lever arm 62. Also, by rotation of the nut 202, the rod 200 can be moved to the position shown in dot-dash lines where the firearm will be operated double action.

Thus it will be seen that the invention provides a firearm that can be readily adjusted to change its action to either single action or double action and vary the take-up or pull of the trigger to suit the individual desires of the shooter.

While presently preferred embodiments of the invention have been illustrated and described, it will be recognized that the invention can be otherwise variously embodied and practiced within the scope of the following claims.

I claim:

1. A firearm adjustable to selectively and mutually exclusively fire single action or double action, said firearm comprising a frame; a trigger pivotally supported in said frame, said trigger including a lower finger-engageable portion below said pivot and an upper portion above said pivot; a drawbar having its forward end engaging said trigger upper portion so that forward movement of said trigger upper portion moves said drawbar forwardly; a hammer pivotable between cocked and firing positions; a sear movable to a position to hold the hammer cocked and to another position to release said hammer so that said hammer can fire the firearm; said drawbar having cocking means thereon for engaging the hammer, during double action, and moving said hammer from fir-

ing position to cocked position and thereafter releasing said hammer so that said hammer can fire said firearm; said drawbar having release means thereon for engaging said sear, during single action, when said sear holds said hammer cocked, and moving said sear to release said hammer so that said hammer can fire said firearm; and, means for adjusting the rearward limit of movement of said trigger upper portion and thus the rearward limit of movement of the drawbar, selectively and mutually exclusively between (1) a front position, for 10 single action, in which said drawbar is located sufficiently forwardly in said frame that said cocking means is located sufficiently forwardly that it does not engage said hammer upon pulling of said trigger, and said release means engages said sear upon the pulling of said trigger, and (2) a back position, for double action, in which said cocking means, upon pulling of said trigger, engages said hammer, cocks said hammer, and releases said hammer.

2. In a firearm including a frame, a trigger pivotally supported in said frame, said trigger including a lower finger-engageable portion below said pivot and an upper portion above said pivot, a drawbar having its forward end engaging said trigger upper portion so that forward movement of said trigger upper portion moves said drawbar forwardly, a hammer pivotable between cocked and firing positions, a sear movable to a position to hold the hammer cocked and to another position to release said hammer so that said hammer can fire the firearm, said drawbar having cocking means thereon for engaging the hammer, during double action, and moving said hammer from firing position to cocked position and thereafter releasing said hammer so that said hammer can fire said firearm, said drawbar having release means thereon for engaging said sear, during single action, when said sear holds said hammer cocked, and moving said sear to release said hammer so that said hammer can fire said firearm; the improvement which comprises an adjustment member supported in said frame and movable to engage said trigger and limit the rearward movement of said trigger upper portion and thus the rearward movement of said drawbar to provide a condition, for single action, in which said drawbar is located sufficiently forwardly in said frame that said cocking means is located sufficiently forwardly that it does not engage said hammer upon pulling of said trigger, and said release means engages said sear upon the pulling of said trigger, said adjustment member being movable to another position to

provide a condition, for double action, in which said cocking means, upon pulling of said trigger, engages said hammer, cocks said hammer, and releases said hammer for firing of said firearm.

- 5 3. A firearm as set forth in claim 2 wherein said trigger is cut away to form a notch, and said adjusting member is a screw threadedly received in said frame and movable to engage said notch to limit the rearward movement of said trigger upper portion.
4. In a firearm adjustable to selectively and mutually exclusively fire single action or double action, said firearm comprising a frame, a trigger pivotally supported in said frame, said trigger including a lower finger-engageable portion below said pivot and an upper portion above said pivot, a drawbar having its forward end engaging said trigger upper portion so that forward movement of said trigger upper portion moves said drawbar forwardly, a hammer pivotable between cocked and firing positions, a sear movable to a position to hold the hammer cocked and to another position to release said hammer so that said hammer can fire the firearm, said drawbar having cocking means thereon for engaging the hammer, during double action, and moving said hammer from firing position to cocked position and thereafter releasing said hammer so that said hammer can fire said firearm, said drawbar having release means thereon for engaging said sear, during single action, when said sear holds said hammer cocked, and moving said sear to release said hammer so that said hammer can fire said firearm; the improvement which comprises a rod movable to engage the front surface of said trigger and limit the rearward movement of said trigger upper portion and thus the rearward movement of said drawbar to provide a condition, for single action, in which said drawbar is located sufficiently forwardly in said frame that said cocking means is located sufficiently forwardly that it does not engage said hammer upon pulling of said trigger, and in which said release means engages said sear upon the pulling of said trigger, said rod being movable to another position to provide a condition, for double action, in which said cocking means, upon pulling of said trigger, engages said hammer, cocks said hammer, and releases said hammer.

45

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2,927,390 Lewis ----- Mar. 8, 1960

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,152,418

October 13, 1964

Dwayne W. Charron

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 72, for "FIGURE S" read -- FIGURES --; column 2, line 12, for "mainstpring" read -- mainspring --; line 20, for ". This spring is the drawbar plunger" read -- is yieldably urged to its forwardmost --.

Signed and sealed this 9th day of March 1965.

(SEAL)

Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents

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