Oct. 22, 1946. R. L. JENKINSON 2,409,939

MULTIPLE BARREL GUN

Filed Aug. 2, 1944 3 Sheets-Sheet 1

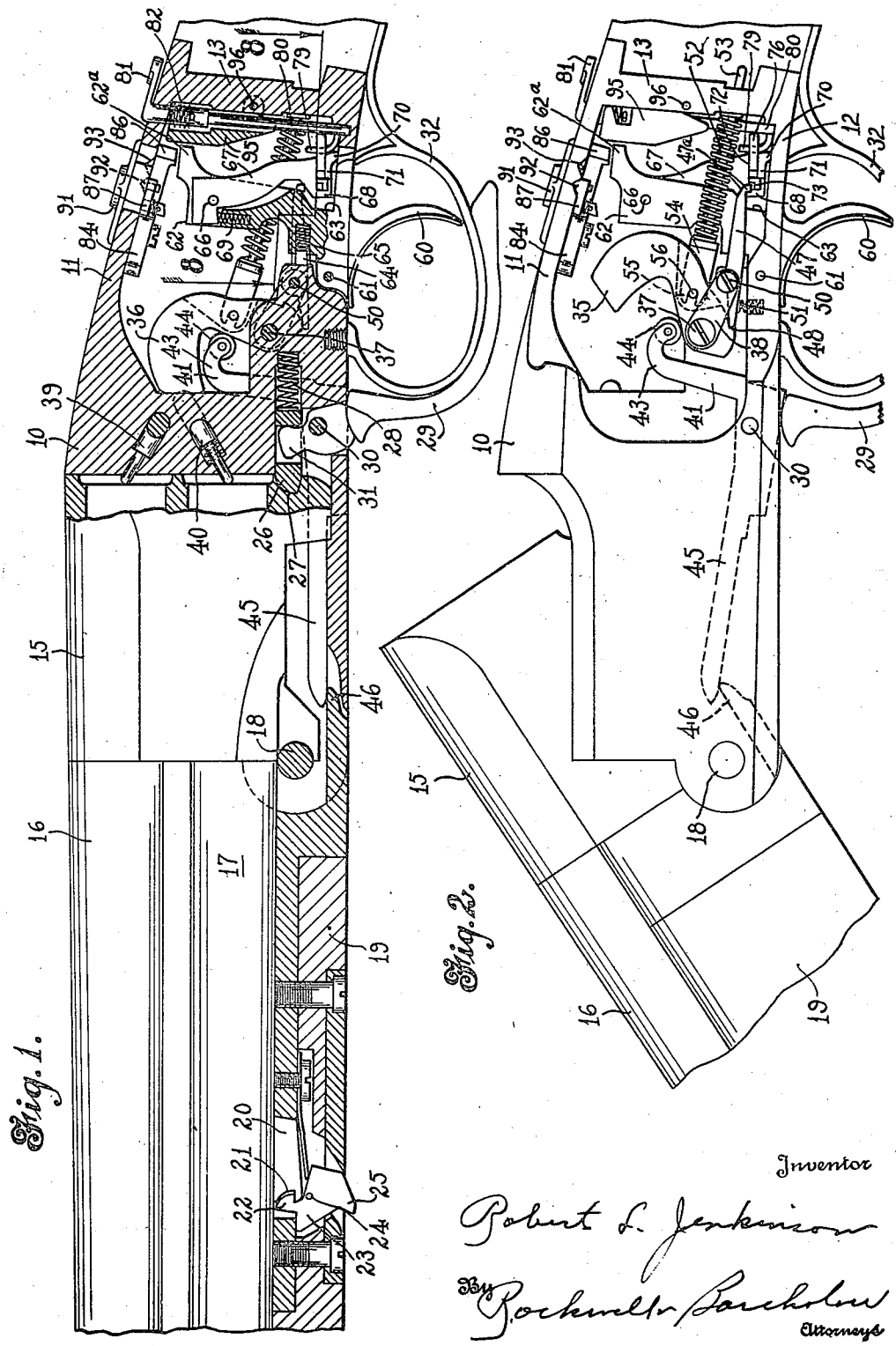


Fig. 1.

Fig. 2.

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Oct. 22, 1946. R. L. JENKINSON 2,409,939

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Filed Aug. 2, 1944 3 Sheets-Sheet 2

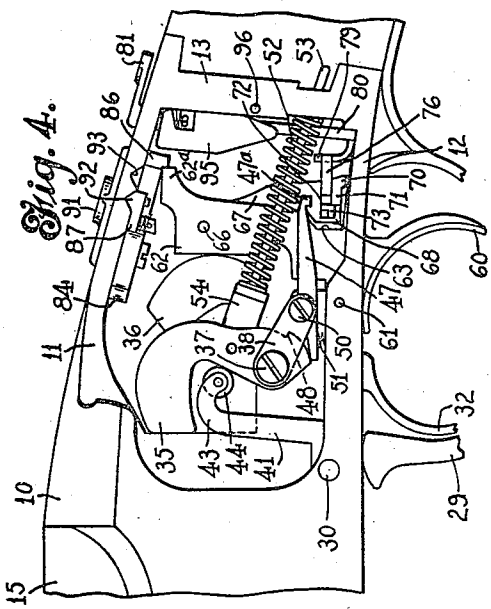


Fig. 4.

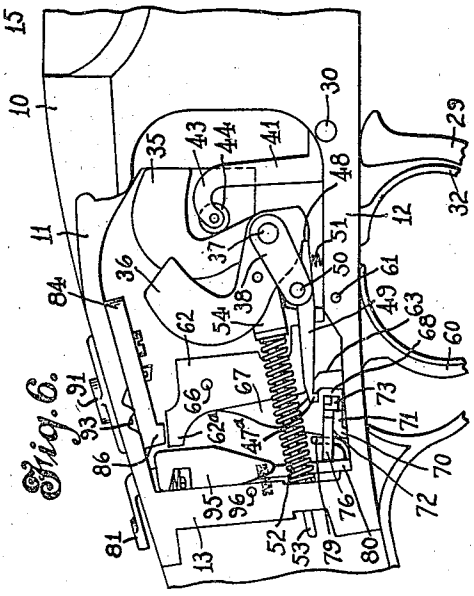


Fig. 6.

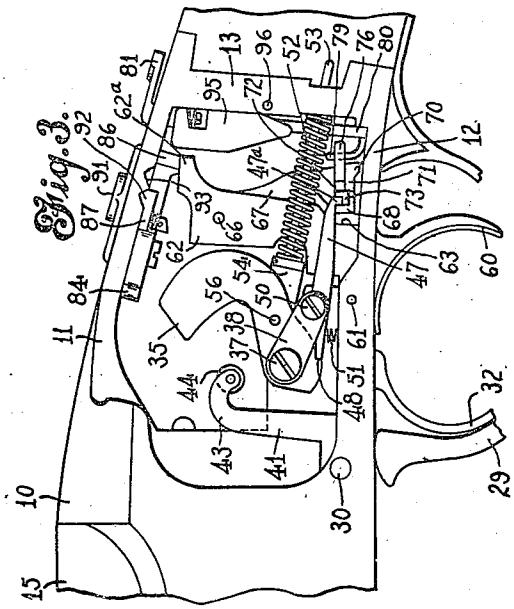


Fig. 3.

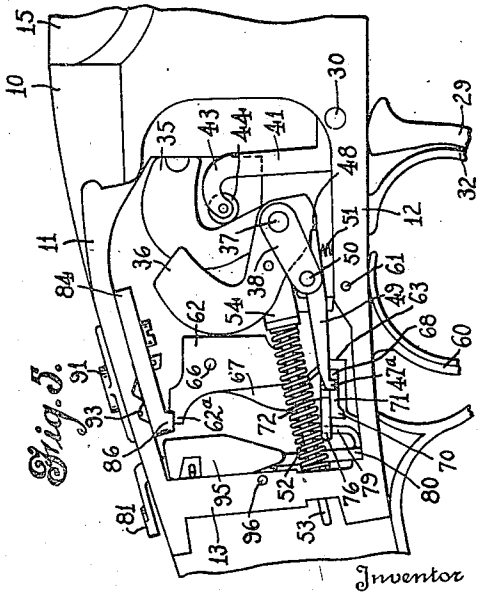


Fig. 5.

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Filed Aug. 2, 1944 3 Sheets-Sheet 3

Fig. 8.

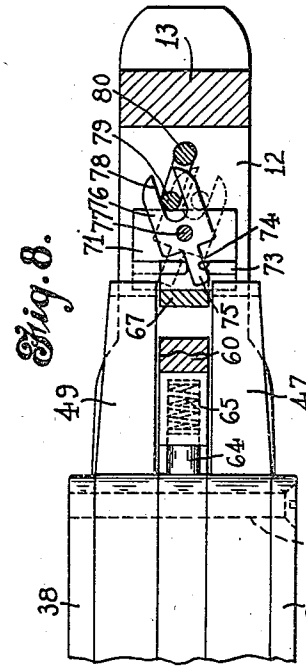


Fig. 9.

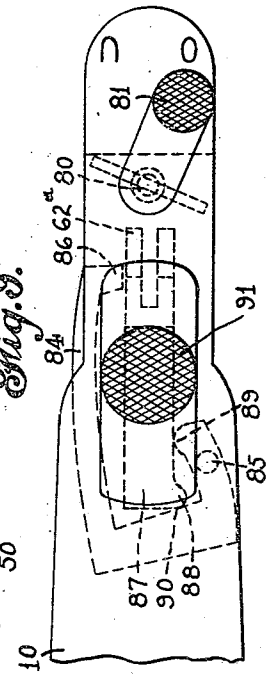


Fig. 10.

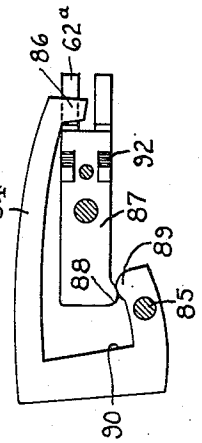
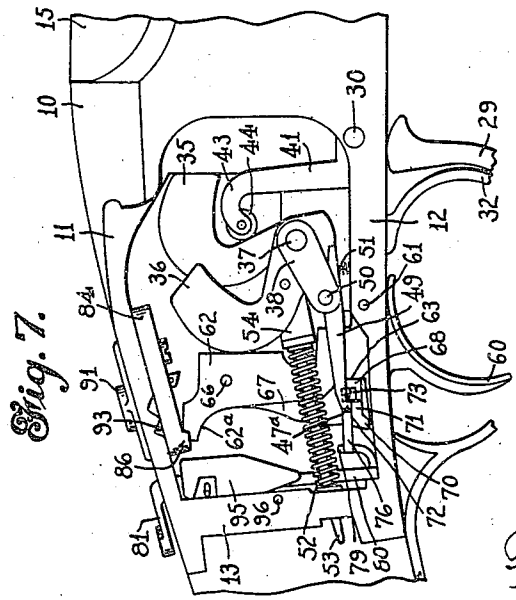


Fig. 7.



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Patented Oct. 22, 1946 2,409,939

UNITED STATES PATENT OFFICE

2,409,939

MULTIPLE BARREL GUN

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Application August 2, 1944, Serial No. 547,768

6 Claims. (Cl. 42—42)

1

This invention relates to firearms and more particularly to multiple barrel guns such, for example, as a so-called over-and-under gun where one barrel is located above the other.

In multiple barrel guns it is desirable to employ a single trigger, the action being so arranged that this trigger will fire first one barrel and then the second; and it is also desirable to provide a device by which the operator may select the barrel which is to be fired first, so that in an over-and-under gun, for example, he may fire the lower barrel first or the upper barrel first as desired. In order that this may be done, it is usual to provide a selector which is operated by the trigger to actuate the sears and release the hammers, the selector being adjustable by means exterior to the action of the gun so that either of the barrels may be fired by the first operation of the trigger, and, thereafter, the remaining barrel discharged by a subsequent operation of the trigger.

The present invention relates, in part, to the sear operating and selecting mechanism in a multiple barrel gun and provides a selector in the form of a shiftable member associated with a part of the trigger mechanism so that this selector may be moved into position to engage and actuate either of the sear members, the other sear member being actuated by means other than the selector, the parts being so arranged that the engagement of the selector with one sear member will prevent the engagement of the other sear member by its actuating mechanism so that only one barrel will be fired at a time.

One object of the present invention is to provide novel selecting mechanism between a single trigger and the plural hammers of a multiple barrel gun.

A still further object of the invention is to provide a single trigger mechanism for multiple barrel guns by arranging a selecting member mounted movably in the trigger mechanism such that it may be moved to one side or the other of the longitudinal axis of the gun to engage either of the sears associated with the two hammers leaving the other sear for engagement by the trigger mechanism itself.

Another object of the invention is to provide a novel controlling means for determining which barrel of a multiple barrel gun may be fired first by the actuation of a single trigger arranged to fire both of the barrels.

A still further object of the invention is to provide a novel form of safety mechanism for preventing the firing of the gun.

2

A still further object of the invention is to provide new and improved means for cocking the hammers of a multiple barrel gun.

To these and other ends the invention relates to the novel features and combinations of parts to be hereinafter described and claimed.

In the drawings:

Fig. 1 is a view partly in section of the action mechanism of a firearm to which my invention has been applied;

Fig. 2 is a view of the action mechanism of the gun, the latter being shown in broken or in open position for insertion of cartridges into the chamber and showing the action of the cocking mechanism;

Fig. 3 is a view similar to Fig. 2 but showing the position of the parts just before the first barrel is fired after partial actuation of the trigger;

Fig. 4 is a view similar to Fig. 3 showing the position of the parts after one barrel has been fired;

Fig. 5 is a view similar to Fig. 4 taken at the opposite side of the gun;

Fig. 6 is a view similar to Fig. 5 but showing the parts after release of the trigger when the first barrel has been discharged;

Fig. 7 is a view similar to Fig. 6 but showing the actuation of the sear of the second hammer by the trigger;

Fig. 8 is a sectional view on line 8—8 of Fig. 1;

Fig. 9 is a top plan view of the rear end of the action frame; and

Fig. 10 is a detailed view of the safety mechanism.

To illustrate a preferred embodiment of my invention I have shown a gun comprising an action frame 10 having upper and lower tangs 11 and 12 and a rear frame member 13. To the action frame is pivoted a barrel section designated generally by the numeral 15, which section comprises an upper barrel 16 and a lower barrel 17, the barrel section being pivoted to the action frame to swing about the pivot 18.

A forearm member 19 is removably secured to the barrel section, the lower barrel being provided with a downwardly projecting lug 20 having a recess 21 in its forward face in which engages a catch or tooth 22 of a detent 23 pivotally mounted in the forearm at 24 and having a lug 25 projecting from the forearm for engagement by the fingers of the operator. It will be obvious that by engaging the member 25 with the fingers, the detent or catch member 23 may be swung in a counterclockwise direction about its pivot 24 and disengage the catch 22 from the recess 21

so as to remove the forearm from the barrel and thus take the gun apart.

The barrel section is held in place by a plunger 26, the lower end of which is adapted to enter a recess 27 in the barrel section, the plunger being urged forwardly by a spring 28 and being operated by a lever 29 pivoted to the action frame at 30 and having an upper forward end 31 engaging in a slot in the plunger 26. It will be obvious that when the lever 29 is turned in a clockwise direction about its pivot 30, the plunger 26 will be withdrawn from the recess in the barrel section so as to permit the swinging of the latter about the pivot 18. It will also be noted that the lever 29 lies in close relation to the trigger guard 32.

A pair of hammers 35 and 36 are pivoted to the action frame about the pivot 37, the hammers being held in place by bridle plates 38, one at each side of the gun. The pivots of the hammers are coincident and the latter are mounted one beside the other at each side of the gun to swing about a common pivot. Firing pins 39 and 40 are slidably mounted in the action frame, the rear ends of these pins lying in substantially the same plane and extending rearwardly through the front portion of the action frame to be engaged by the hammers 35 and 36 respectively. It will be noted that one of the firing pins extends upwardly and the other downwardly so as to properly fire the cartridges in the upper and lower barrels.

A cocking lever 41 cooperates with each of the hammers, these levers being pivoted at 30 on the action frame and each of them having a rearwardly curved end 43 provided with an antifriction roller 44 which engages the front face of one of the hammers to move it to cocked position. Each of the levers 41 is provided with a forwardly extending arm 45 adapted to be engaged by a toe member 46 provided on the forearm of the gun, this toe member engaging both of the arms 45 to move the latter in a clockwise direction about the pivot 30 when the gun is opened as shown in Fig. 2 and move the hammers to cocked position.

A sear 47 cooperates with a sear notch 48 on the hammer 35 to hold the latter in cocked position and likewise, at the other side of the gun, a sear 49 similarly controls the hammer 36. The sears 47 and 49 are pivoted to the action frame at 50 and their forward ends are held upwardly by springs 51, the sears being held in place by the bridle straps 38.

The hammers are urged forwardly by springs 52, each of these springs surrounding a plunger rod 53 guided in the frame member 13 and bearing at its forward end against a plunger 54 comprising a flat plate-like member entering a slot in the rear face of one of the hammers and having a fork at 55 embracing a pin 56 in the hammer.

As has been previously stated, both hammers are actuated by a single trigger 60 pivoted to the actuating mechanism at 61, the trigger having secured thereto an upwardly extending post 62, which post is provided with a recess 63 in its rear face (Fig. 1) having a purpose to be later described. Also mounted in a recess in the trigger is a plunger 64 urged outwardly by a spring 65, the plunger contacting at its forward end a part of the action frame so as to urge the trigger in a clockwise direction about its pivot, the spring 65 acting as the usual trigger spring to maintain the latter in a forward position.

The post 62 is bifurcated or slotted longitudinally as best shown in Figs. 1 and 10, and between the walls thus formed is pivoted at 66 a sear actuator or lifter 67, which lifter depends or hangs downwardly from the pivot and is provided with a nose 68 adapted to extend into the recess 63. A spring 69 normally urges the lifter in a clockwise direction about its pivot 66, and movement of the nose 68 of the lifter forwardly into the recess 63 is normally prevented, however, by the engagement of the toe 70 on the lifter with the lower tang of the action frame. It will be apparent, however, that if the trigger 60 is pulled rearwardly and the post 62 raised and moved forwardly, the toe 70 will be disengaged from the tang 12 and permit the lifter 67 to swing forwardly about its pivot 66.

As shown more especially in Fig. 8, the lifter is provided with a laterally extending base portion 71 which extends outwardly on both sides of the body portion 67 so that the outwardly projecting upper surfaces of the foot portion 71 will lie below the rear ends 47a of the sears and when the lifter is moved forwardly and upwardly, these projecting ends of the foot portion 71 will engage the rear ends 47a of the sears and lift the latter to release the hammers. It may here be noted that when the trigger is pulled and the post 62 moves forwardly, the lifter 67 will move forwardly under pressure of the spring 69, the toe 70 being maintained in engagement with the lower tang 12 of the action mechanism until the nose 68 on the lifter strikes the face of the recess 63 at which time any further swinging movement of the lifter about the pivot 66 will be checked and the lifter will be raised with the post 62. During this forward movement of the lifter, the laterally extending portion of the foot 71 will be brought under the rear ends 47a of the sears and in the subsequent raising movement of the lifter, the sears will be moved to release the hammers.

Means are provided to select which of the sears will be first operated by the lifter and this means will now be described.

The lifter is provided with a rearwardly opening slot 72 just above the foot portion 71, and mounted for laterally sliding movement in this slot is a selector member 73 of L-shaped form in cross section, the rear wall of this member being provided with an opening 74 (Fig. 8) adapted to receive a post 75 on a lever 76 pivoted at 77 to the foot portion 71 and also lying in the slot 72. The lever 76 is provided with a forked rear end slotted at 78 to receive an upwardly extending finger 79 secured upon a rod 80 mounted to oscillate in the upper and lower tang members 11 and 12 and extending through the upper tang where it is provided with a fingerpiece 81 (Fig. 1) by which it may be manually oscillated about its axis. Surrounding the rod 80 is a spring 82 tending to maintain this rod in one or the other of two extreme positions.

It will be apparent that when the member 81 is in the position shown in Fig. 1, the selector slide 73 will be held in the position shown in Fig. 8, that is in the left hand side of the actuator or lifter 67 when looking toward the gun barrels. In this position the selector will, as will be more fully described hereinafter, be in position to engage the left hand sear 47a so as to first release the hammer 35 of the upper barrel when the trigger is pulled. However, if the member 81 is shifted to the angular position shown in dotted lines in Fig. 8, the lever 76 will also be shifted, moving the selector in the slot 72 to the right

hand side of the lifter arm where it would be in position to engage the sear controlling the hammer 36 of the lower barrel.

A safety mechanism is mounted on the upper tang 11, this mechanism comprising a safety lever 84 pivoted to the tang at 85 and having a tail portion 86 adapted in one position of the lever to stand above the trigger post 62 and prevent operation of the trigger. The position of the lever 84 is controlled by a slide 87 slidably mounted on the tang 11 and having a nose portion 88 adapted to engage a nose portion 89 when the slide is moved to throw the lever 84 to its operative or safety position and to engage the inner surface of a part of the lever 84 substantially at the point 90 to move the lever 84 to its inoperative or firing position. The slide is controlled by a fingerpiece 91 secured thereto and slidable on the upper surface of the tang, and the member 87 is provided with the tenon 92 adapted to engage in recesses 93 in the tang to releasably hold the slide in either on or off position to which it may be moved. It will be noted that the safety lever 84 has a pivotal or swinging movement to and from its operative position as distinguished from the safety mechanism in present use, which will move longitudinally of the gun, although the operating slide 91 is mounted for longitudinal movement.

The operation of the gun may now be described as follows: If the user desires to cock the gun, the lever 29 is operated thus withdrawing the plunger 26 from the notch 27 and allowing the gun to be broken as shown in Fig. 2. During this movement the toe member 46 on the forearm engages the cocking levers 45, and by moving these levers around their pivots 30, causes the rollers 44 to engage the hammers 35 and 36 and move them from the position shown in Fig. 1 to the cocked position shown in Fig. 2. The gun may now be loaded and closed and is ready for firing.

Assuming that the member 81 is in the position shown in Figs. 1 and 8, the selector member 73 is in its extreme lefthand position with relation to the lifter 67. When the trigger is pulled, and the lifter 67 moves forwardly, the front L-shaped face of the selector will move below and also impinge against the part 47a of the sear 47 of the hammer 35 as shown in Fig. 3. When it strikes the rear edge of the sear and can no longer move forwardly, it will be moved upwardly by the trigger post 62, thus moving the rear end of the sear 47 upwardly and releasing the front end of the sear from the notch 48 to release the hammer 35 and fire the "over" barrel as shown in Fig. 4. After firing, the rear end of the sear is held upwardly by the tail portion of the hammer in front of the sear notch 48 so that the rear end of the sear will not be engaged by the selector during a subsequent operation.

It will also be observed as shown in Fig. 5 that when the trigger is pulled and the lifter moved forwardly, the engagement of the selector with the rear end of the sear 47 and the subsequent upward movement of the lifter will cause the latter to move upwardly before the laterally extending portion 71 of the lifter has moved forwardly to a sufficient extent to engage below the rear end of the sear 49 of the hammer 36 (Fig. 5) so that the hammer 36 is not released.

When, however, the trigger is released and again moved rearwardly by its spring, the parts stand in the position shown in Fig. 6. If the trigger is now operated, the selector will no longer engage the sear 47 but will slide thereunder, and the lifter 67 will be moved forwardly to a sufficient extent to permit the part 71 to move below the rear end of the sear 49 (Fig. 7) at which time forward movement of the lifter is checked by the engagement of the nose 68 in the recess 63 and thereafter upward movement of the lifter would release the sear 49 from the sear notch of the hammer 36 and cause the discharge of the "under" barrel.

The reverse operation takes place if the selector control member 81 is moved to its dotted line position shown in Fig. 8, and in this event, the "under" barrel will be fired by the first operation of the trigger and the "over" barrel by the second.

It will be seen, therefore, that in the firing of the first barrel, the sear is engaged and released by the selector member, while in the firing of the second barrel, the sear is engaged and released by the laterally extending base portion 71 of the lifter 67 and that shifting the selector from one side to the other of the lifter member determines which barrel will be fired first.

In order to prevent so-called double firing, a weight 95 is pivoted at 96 to the member 13, which weight is drawn forwardly about its pivot by inertia upon discharge of the gun so as to underlie the finger 62a at the upper rear corner of the post 62 and prevent the trigger being pulled a second time until it is released.

While I have shown and described a preferred embodiment of my invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and within the scope of the claims.

What I claim is:

1. In a multiple barrel firearm, a pair of hammers, a sear controlling each hammer, a single trigger for operating the sears, connecting means between said trigger and sears including a sear actuator suspended from the upper portion of the trigger and a selector movably associated with the lower end of said actuator, said selector standing forwardly of said actuator and being movable into position to engage either of said sears selectively, and one sear being engageable by the actuator when the selector is in position to engage the other sear.

2. In a multiple barrel firearm, a pair of hammers, a sear controlling each hammer, a single trigger for operating the sears, connecting means between said trigger and sears including a sear actuator and a selector movably associated with said actuator, said actuator being pivotally carried by the trigger, said selector being movably mounted on said actuator for movement transversely thereof, said actuator and selector each having means to engage and actuate said sears, and said selector having a part standing forwardly of said actuator to engage the selected sear prior to engagement of the other sear by the actuator.

3. In a multiple barrel gun, a pair of hammers arranged side by side, a sear controlling each of said hammers and positioned generally below the same, a trigger, a post extending upwardly from the trigger between said sears, a lifter pivoted at its upper end to the post and extending downwardly therefrom and having a part at each side thereof extending laterally therefrom to engage one of the sears, and a selector carried by said lifter and movable transversely thereof to engage one of said sears selectively prior to the engagement of the other sear by said part.

4. In a multiple barrel gun, a pair of hammers arranged side by side, a sear controlling each of said hammers and positioned generally below the same, a trigger, a post extending upwardly from the trigger between said sears, a lifter pivoted at its upper end to the post and extending downwardly therefrom and having a part at each side thereof extending laterally therefrom to engage one of the sears, a selector carried by said lifter and movable transversely thereof to engage one of said sears selectively prior to the engagement of the other sear by said part, and a pivoted shifter member mounted on said lifter to shift the selector from one side thereof to the other.

5. In a multiple barrel gun, a pair of hammers arranged side by side, a sear controlling each of said hammers and positioned generally below the same, a trigger, a post extending upwardly from the trigger between said sears, a lifter pivoted at its upper end to the post and extending downwardly therefrom and having a part at each side thereof extending laterally therefrom to engage

one of the sears, a selector carried by said lifter and movable transversely thereof to engage one of said sears selectively prior to the engagement of the other sear by said part, and means accessible at the exterior of the gun to shift said selector member in said lifter.

6. In a multiple barrel firearm, a pair of hammers, a sear controlling each hammer, a single trigger for operating said sears, connecting means between said trigger and sears including a sear actuator connected to the trigger to be moved thereby, means mounting said actuator for forward and upward movements by the trigger to first engage and then move said sears, a selector movably mounted on the actuator to move relatively thereto in a direction transverse to the longitudinal axis of the firearm, and said selector having a part disposed forwardly of the actuator to engage a selected sear prior to the engagement thereof by the actuator.

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