

[54] GUN

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[58] Field of Search..... 42/42

[56]

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[57]

ABSTRACT

A gun having two barrels and a single trigger with a selector device for determining the order in which the barrels are fired by the single trigger, the said selector device including a balance arrangement designed to avoid the possibility of the second barrel being accidentally fired as the gun recoils from the first shot and the selecting device shifts to engage the release catch for the firing mechanism of the other barrel. The selector arrangement comprises a first elongate element which is pivotally associated with the trigger in such a way that it cannot move radially with respect to the trigger, such radial movement causing engagement with the selected release catch of the gun to effect firing of one of the barrels and being caused when the trigger is pulled, and a second elongate element pivotally mounted at one end on the stock and linked at the other end to the first elongate element in such a way that relative radial movement with respect to said pivots is permitted (thereby allowing movement about said pivots, and deliberate firing movement of said first elongate element by moving said trigger) but relative movement in orthogonal directions with respect to said radial direction are prevented or restricted.

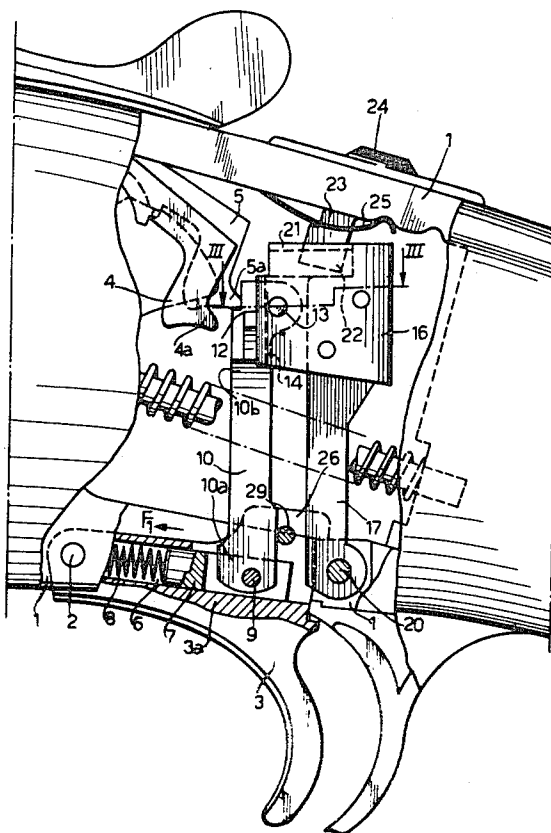
4 Claims, 3 Drawing Figures

FIG. 1

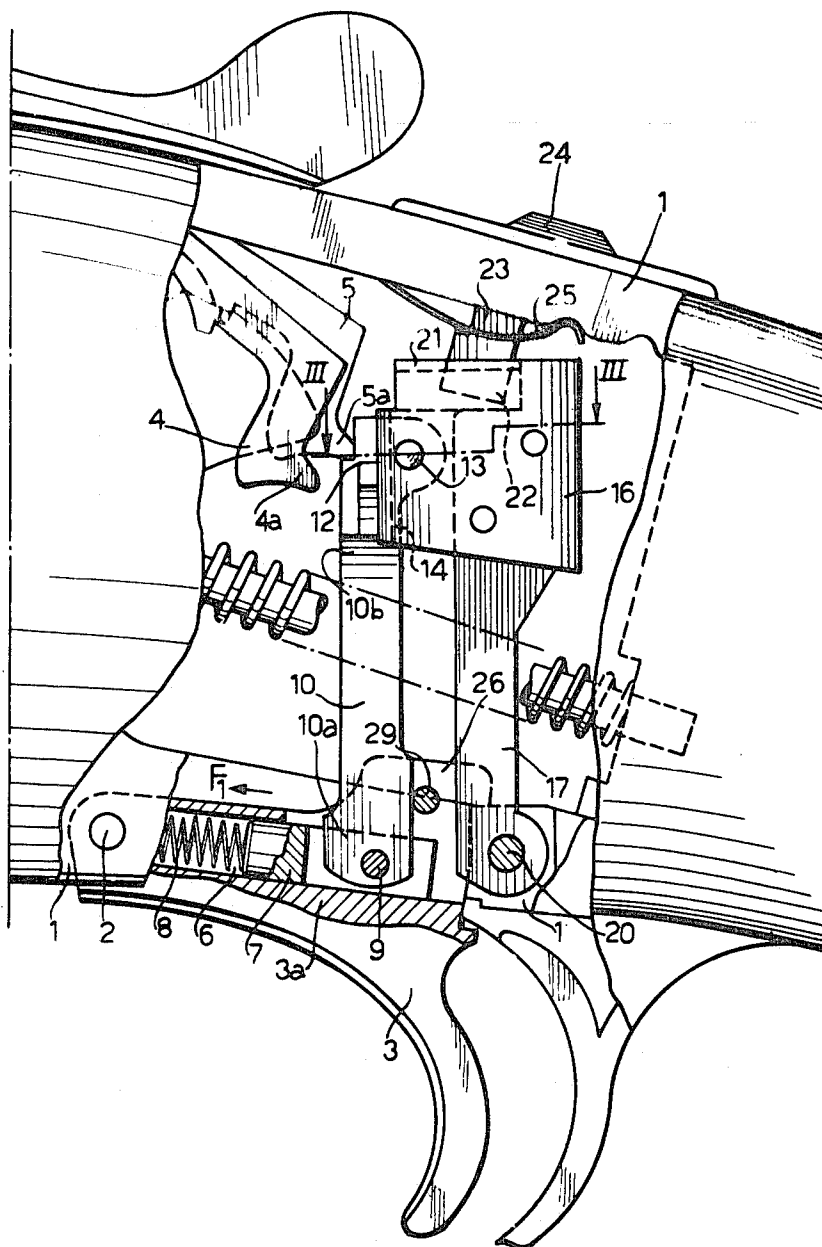


FIG. 2

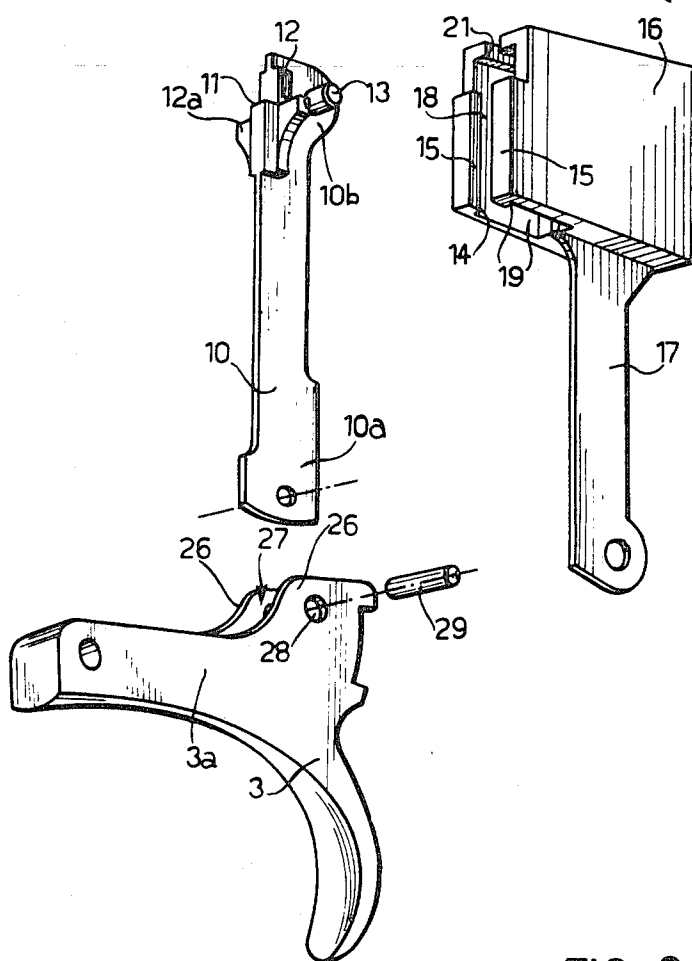
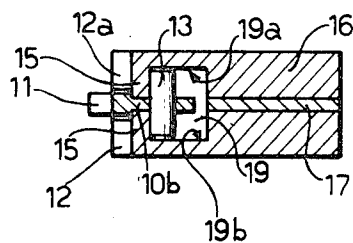


FIG. 3



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BACKGROUND OF THE INVENTION

The present invention relates to guns, and particularly to guns having two barrels, either one above the other, or side by side, with a single trigger and means for selecting the sequence in which the barrels are fired by the single trigger.

Known selecting arrangements for the firing sequence of the barrels comprise a device associated with the trigger and provided with a projection which engages the ends of the release catches which control the release of the hammers. A lever controllable from the outside of the gun is used to position the device in a first or in a second position depending on which barrel is selected for the firing first. When the position of the device is selected the projection of the device engages with one or other of the said release catches in such a way as to raise the release catch of the hammer corresponding to the selected barrel when the trigger is operated. The device is linked to the trigger so that it is moved thereby when the trigger is operated. Upon the firing of the first barrel the device, which has a certain mass, recoils with the recoil of the gun and this charges an elastic biasing element which subsequently urges the device back towards the release catches in such a way that the projection on the device moves into an operative position with respect to the release catch which was not previously actuated. The gun is thus set up for firing the other barrel.

In practice it has been found that the mass of the selector device, which is necessary to make it adequately sensitive to the recoil action may cause the gun to be accidentally discharged as it is being closed, due to the effect of the upward inertia of the selector device. This disadvantage is particularly evident in the case of a gun having a very light-weight trigger release mechanism, that is, in the case of a gun in which only a slight pressure on the trigger is required to fire the shot. To obviate this disadvantage it has been proposed to form the body of the selector device in two parts, a first part having the projection for engagement with the end of the release catch and being pivotally associated with the trigger, and a second part movable on the first part in the radial direction with respect to the pivot on the trigger, and having a greater mass than the mass of the first part. In this way whilst it is equally sensitive to the recoil action, due to the connection between the second part and the first part, movement in a direction perpendicular to the recoil direction due to the inertia of the selector device should not affect the first part as the gun is being closed, and since it is this part which engages the end of the release catches there should be no risk of accidental discharge as the gun is being closed. However, in practice it has been found that even this arrangement has disadvantages inasmuch as the means interconnecting the second part, of greater mass, and the first part can create sufficient friction that when the gun is being closed there is still a danger that the first part, while engaging with the release catches may be pulled upwards by the second part thereby accidentally firing the gun.

OBJECTS OF THE INVENTION

The object of the present invention is to provide a selector device for the selection of the firing sequence in a double-barrelled gun with a single trigger, which

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makes it possible to eliminate the above mentioned danger of accidental discharge to which known types of selector are prone, and to allow maximum degree of safety even during the closure of the gun, particularly in guns in which the trigger release is of very light weight.

SUMMARY OF THE INVENTION

According to the present invention there is provided a gun of the type having two barrels and a single trigger, and means for selecting the order in which the barrels are fired by successive operations of the single trigger, the selector device comprising a first elongate element, means pivotally associating said first elongate element at one end thereof with said trigger, projections at the other end of said first elongate element, said projections being selectively engageable with release catches which control the firing of said barrels, a second elongate element, said second elongate element being substantially heavier than said first elongate element, means pivotally connecting said second elongate element at one end thereof to said stock of said gun so that said second elongate element can swing in a plane including the recoil direction along which the gun recoils when fired, coupling means interconnecting said other ends of said first and second elongate elements, said coupling means allowing relative movement of said other ends of said first and second elongate elements in a substantially radial direction with respect to said pivots, and coupling said other ends together for movement in said recoil direction and in the direction perpendicular to both said substantially radial direction and said recoil direction.

Various other features and advantages of the invention will become more apparent during the course of the following description of a preferred embodiment, with reference to the accompanying drawings, which is provided purely by way of non-restrictive example.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a lateral view partially in section of part of a gun having an arrangement for selection of the firing sequence and formed as an embodiment of this invention;

FIG. 2 is an exploded perspective view of the structure of the selector device itself;

FIG. 3 is a cross section taken on the line III—III of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the drawings there is shown a stock 1 of the gun on which is pivotally mounted a trigger 3 by means of a pivot pin 2. In manner known per se there are also mounted release catches 4, 5 on the stock 1, the release catches 4, 5, controlling the release of the firing hammers, not shown.

The release catch 4 is shown in the released position which it adopts after firing has taken place (or before the firing hammers are cocked), and the catch 5 is shown in the cocked position.

The trigger 3 has a part 3a in which there is formed a cylindrical cavity within which there is slidably mounted a small piston 7 which is biased by a spring 8 toward the butt of the gun. The piston 7 carries a pivot pin 9 to which is connected one end 10a of a bar 10 which forms the said first elongate element of the selec-

tor device of this invention. The upper part 10b of the bar 10 is provided with three moulded projections 11, 12 and 12a, the projections 12 and 12a being arranged one on either side of the projection 11 for engagement in a known manner, with the ends 4a or 5a of the release catches 4 and 5.

The upper part 10b of the bar 10 is also provided with a pin 13 which extends on both sides of the bar 10 and cooperates with the inside surfaces 14 of a deep slot 19 formed in a relatively heavy head 16 which is formed at the end of a second bar 17 which constitute the second elongate element of the selector device of this invention.

The deep slot 19 has inwardly turned flanges or lips 15 along the edge adjacent the bar 10 and further inwardly turned flanges or lips 21 on the upper edge thereof.

The lower end of the bar 17 is pivoted on pin 20 secured to a fixed part of the stock 1 of the gun. The lower end of bar 17 also is slidably mounted on pin 24 lateral movement. The lips 21 define a slot within which engages the end 22 of projection 23 the lateral position of which is controllable from outside the gun by a movable button 24 which is arranged to effect movement of the selector device in a direction transverse to the longitudinal axis of the gun so as to select the barrel to be fired first. The projection 23 is held in place by a spring 25 which, in a manner known per se, provides two stable positions for the head 16 which is thus held in one position or the other, in dependence on which barrel is selected to fire the first shot.

With reference to FIGS. 1 and 2 it will be noted that the body 3a of the trigger has two projections 26 which carry a transverse pin 29 in respective holes 28. The rear part of the end 10a of the bar 10 abuts the pin 29 as the bar 10 rotates about the pivot 9 thus causing the piston 7 to be moved against the action of the biasing spring 8, or causing the bar 10 to rotate when the piston 7 is moved by the biasing spring 8.

Selection of the barrel to be fired first is effected by longitudinally moving the button 24 which, by engagement of the end 22 of the projection 23 with the lips 21 which define an angled slot moves the body 16 to one side or the other. The movement of the head 16 transmits lateral movement, with respect to the longitudinal axis of the gun, in a direction perpendicular to both the recoil direction (which is parallel to the longitudinal axis of the gun), and the radial direction from the pivot 9, to the upper end 10b of the bar 10. This movement is due to the engagement of the ends of the pin 13 with the side walls of the slot 19 which forms a rigid coupling with negligible play between the end 10b and the body 16 with respect to such lateral movement. Upon such movement, in a manner known per se, the projection 12 is placed in engagement with the end 4a or 5a of one of the release catches 4 or 5, assuming both catches 4 and 5 are cocked. In the case shown in FIG. 1 the projection 11 is engaged with the end 5a of the catch 5 so that the first barrel to be fired will be the one associated with the catch 5.

When the trigger 3 is pulled the bar 10 is raised upwards and, due to the engagement of the projection 11 with the end 5a, the release catch 5 is raised causing the shot to be fired. The recoil of the gun upon firing causes the head 16 to move rearwardly rotating about the pivot 20 on the stock 1. As it rotates the head 16 draws the upper end 10b of the bar 10 due to the en-

gagement of the sides of the pin 13 with the inside faces of the lips 14, so that the bar 10 rotates about the pin 29 against which the lower end 10a abuts.

It should be noted that upon actuation of the trigger 3, only the part 10 of the selector device is raised upwards, the head 16 with the bar 17 remaining stationary. As the bar 10 rotates about the pin 29 during the recoil of the gun the piston 7 is pushed in the direction of the arrow F₁ by virtue of the connecting pivot 9 so that the spring 8 is compressed. Upon termination of the recoil action the spring 8 extends to return the upper part 10b of the bar 10 and thus also the head 16 to the position where the projections 11, 12, 12a, abut the ends 4a and 5a of the release catches.

If the hammer associated with release catch 4 has been cocked (with reference to FIG. 1) the lateral projection 12 would then have been engaged with catch 4 so the gun would have been set up for firing a shot from the other barrel.

Obviously the selection of the first shot may be made by moving the button 24 in the opposite direction from that described above so that the catch 4 is released first rather than the catch 5.

It will be appreciated that the selector device is not in practice sensitive to the forces which might accidentally arise to cause the head 16 to move in a substantially radial direction with respect to the pivoting points 9 and 20 since the head 16 which constitutes the mass which is sensitive to the recoil action, is radially fixed with respect to the pivot 20 on the stock 1 of the gun so that radially directed forces with respect to the pivot 20, which arise, for example, when the gun is being closed, do not cause upward displacement of the head 16.

Consequently there is no danger that friction between the head 16 and the end 10a might draw the latter upwards, causing accidental firing of the gun. The bar 10, which is directly engaged with the ends 4a and 5a of the release catches, has relatively little mass so that although it is associated with the trigger and can be raised to operate the release catches, its mass is insufficient to cause accidental firing when the gun is being closed, and this is true even for guns having a very light weight trigger release. At the same time the maximum use of the recoil is made.

This invention as described may be modified by many variations of a constructional nature without departing from the spirit and scope of the invention, for example, the dimensions and the materials may be any desired, according to requirements.

What is claimed is:

1. In a gun of the type having two barrels, a stock,

means mounting said barrels on said stock, a single trigger, and

means for selecting the order in which said barrels are fired by said trigger,

the improvement wherein said means for selecting the order in which said barrels are fired by said trigger comprises:

a first elongate element,

means pivotally associating said first elongate element at one end thereof with said trigger,

projections at the other end of said first elongate element, said projections being selectively engageable with release catches which control the firing of said barrels,

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a second elongate element, said second elongate element being substantially heavier than said first elongate element,

means pivotally connecting said second elongate element at one end thereof to said stock of said gun so that said second elongate element can swing in a plane including the recoil direction along which the gun recoils when fired,

coupling means interconnecting said other ends of said first and second elongate elements, said coupling means allowing relative movement of said other ends of said first and second elongate elements with respect to each other in a substantially radial direction with respect to said pivots, and coupling said other ends together for movement in said recoil direction and in the direction perpendicular to both said substantially radial direction and said recoil direction.

2. The gun of claim 1 wherein said coupling means interconnecting said first and second elongate elements comprise,

a pin on said other end of said first elongate element,

a support surface on said other end of said second elongate element,

means biasing said pin on said first elongate element into contact with said support surface on said second elongate element to effect said coupling be-

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tween said first elongate element and said second elongate element in said recoil direction, said pin being movable over said support surface in said substantially radial direction.

3. The gun of claim 2 wherein there are two further support surfaces on said second elongate element, said further support surfaces abutting the ends of said pin and coupling said first elongate element and said second elongate element in said direction perpendicular to both said substantially radial direction and said recoil direction.

4. The gun of claim 3 wherein said means pivotally associating said first element at said one end with said trigger comprise,

a cavity in said trigger,

a piston slidable in said cavity,

means biasing said piston to one end of said cavity,

means pivotally mounting said one end of said first element on said piston, and

fixed abutment means on said trigger, said first element abutting said fixed abutment means and rotating thereabout as said one end of said first element slides with said piston against said resilient biasing means, and said other end of said first elongate element moves in said recoil direction.

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