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3,389,488

SINGLE-TRIGGER RELEASE MECHANISM FOR A DOUBLE-BARRELED SHOTGUN

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3 Sheets-Sheet 2

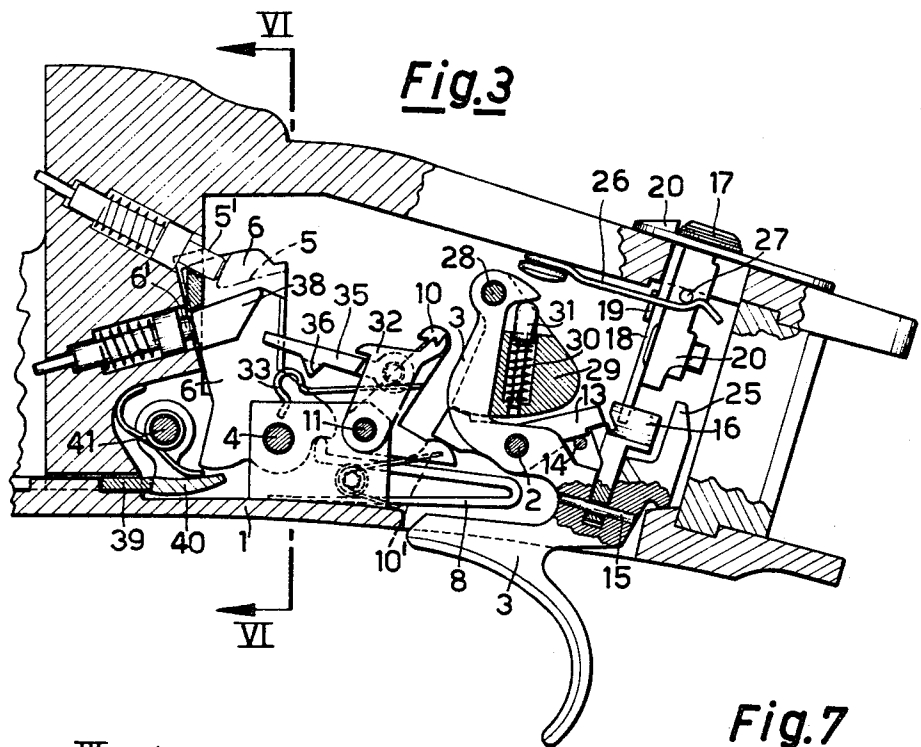


Fig. 3

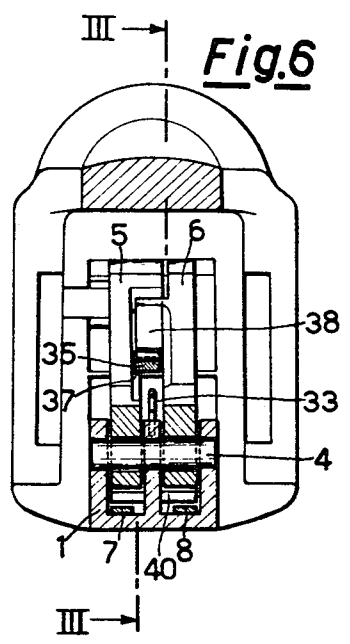


Fig. 6

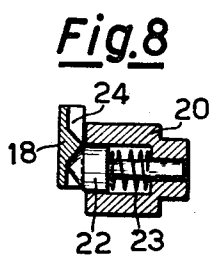


Fig. 8

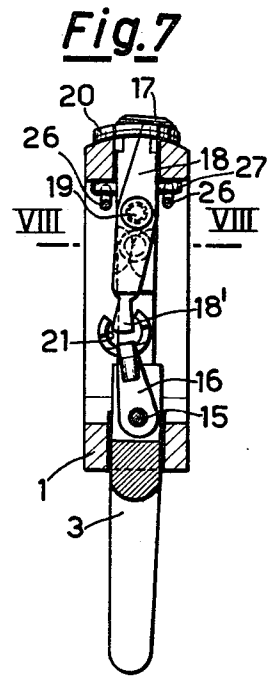


Fig. 7

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Fig. 4

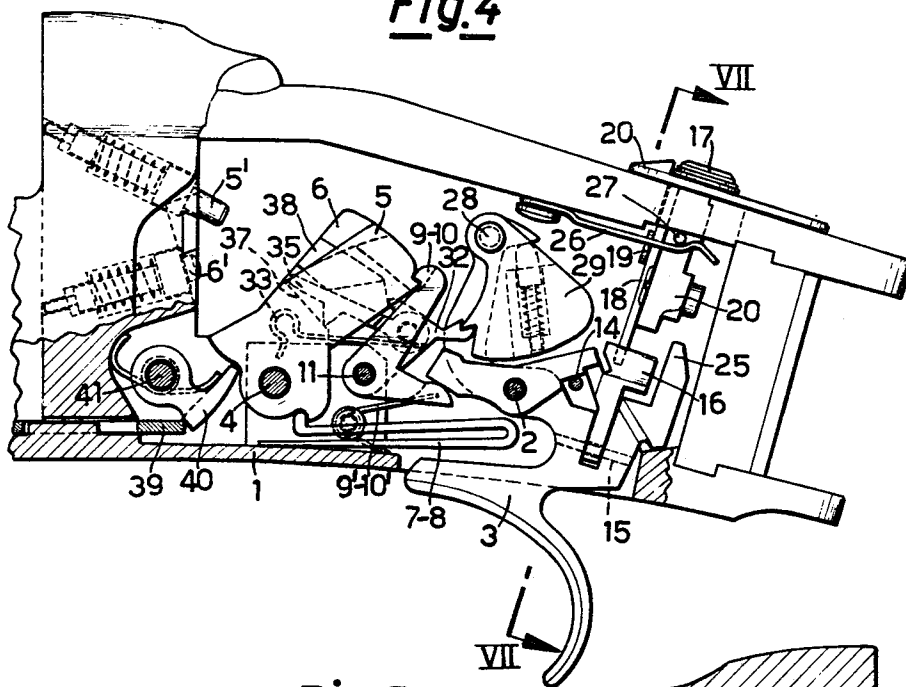
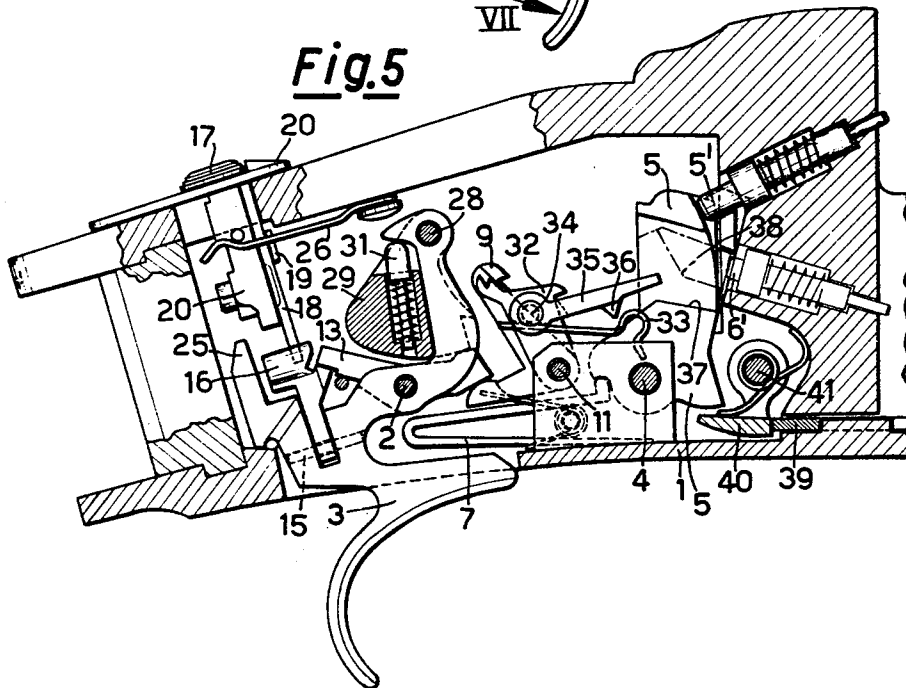


Fig. 5



1

2

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SINGLE-TRIGGER RELEASE MECHANISM FOR A DOUBLE-BARRELED SHOTGUN

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2 Claims. (Cl. 42-42)

ABSTRACT OF THE DISCLOSURE

A release device, actuated by a single trigger, for gunlocks is disclosed as consisting of an oscillating mass connected to a selection mechanism to obtain the action of a single hammer at a time and permitting to select either hammer, at will, as the first to be operative in firing.

Release devices are known which are adapted to cause the release of two hammers to take place in succession in twin-barreled or over-and-under shotguns.

In such a device, the operator determines which of the two hammers is to be released first, by manipulating an external selection member. The recoil due to the firing of the first shot then determines the engagement of the trigger with the hammer-release mechanism for the second hammer, so that the latter is enabled to be released by a second actuation of the trigger.

In such devices, the misfiring of the first shot is such as to give rise to the lack of release of the second hammer, since the latter, if no recoil takes place, cannot be controlled by the trigger. The restoration of the operability of the rifle is thus such as to require complicated manipulations, and these are particularly annoying when, for example, in hunting, a rapid shot sequence is required.

An object of the present invention is to overcome this defect by permitting a rapid actuation of the second hammer even when no recoil takes place.

In the inventive device, moreover, provisions are made so as to make the accidental simultaneous actuations of both hammers impossible, thus doing away with the troubles which could thereby affect the rifleman.

The inventive device comprises two hammers pivoted to a framing, each hammer being thrust by a spring from a cocked position to a fired position, each hammer being retained in its cocked position by a pawl mechanism. The invention further comprises a manually actuatable trigger pivoted to said framing, the device being characterized in that on said trigger there is manually displaceably mounted a member adapted to be set in either of two positions, in each of said positions said member, as the trigger is pivoted, disengages either pawl mechanism of its attendant hammer. To said trigger there is coupled a movable mass thrust by a spring action from a first to a second position. A movable engagement member is provided to hold said mass in said first position, said mass being disengaged from said movable engagement member when it is subjected to a recoil acceleration and when it is in said second position, being movable by pivoting of the trigger so as to unlock both pawl mechanisms.

In order that the release mechanism according to this invention may become fully understood, an exemplary embodiment thereof will be now described and shown in the accompanying drawings, wherein:

FIG. 1 is a side view of the firing assembly of an over-and-under rifle shotgun, with the hammer in the safety and cocked position.

FIG. 2 is a side view, partly in cutaway, of the firing assembly with the left hammer in fired position.

FIG. 3 is a cross-sectional side view taken along the line III-III of FIG. 6, both hammers being shown in the fired position.

FIG. 4 is a side view, partly in section, of the firing assembly with the hammers in the cocked position.

FIG. 5 is a side view, partly in section, of the firing assembly with the hammers lowered.

FIG. 6 is a cross-sectional view taken along the line VI-VI of FIG. 3.

FIG. 7 is a cross-sectional view taken along the line VII-VII of FIG. 4, and

FIG. 8 is a cross-sectional detail view taken along the line VIII-VIII of FIG. 7.

Having now particular reference to FIGS. 1, 2 and 3, the release mechanism comprises a frame 1 to which a trigger 3 is pivotally mounted at 2.

To the framing there are pivoted also, at 4, two hammers 5 and 6 urged against the firing pins 5' and 6' by two sturdy springs, 7 and 8, respectively. The hammers are held in their cocked position by the sears 9 and 10 pivoted at 11, which are urged towards engagement with the cocked hammers by springs 9' and 10'. To the body 3 of the trigger there are pivoted to the same pivot 2, two rockers 12 and 13 which rest with one end on the respective sears 9, 10. A clockwise rotation of the rockers is hindered by studs 14 affixed to the framing.

To the body 3 of the trigger is pivoted at 15 a body 16, best shown in FIG. 7.

The body 16 can be positioned beneath either end of the rockers 12 or 13, with a manual action on the knob-carrying end 17 of a lever 18, which is pivoted at 19 to the slide 20 which can be slid within a slit formed in the framing. In order to permit the sliding of the slide and attendant lever 18, the latter is connected to the body 16 in a slidable manner by housing its end 18' within the slit 21 of the body 16. In order that the two positions of the lever 18 (and thus the aforementioned corresponding positions of the body 16) may be uniquely determined, a conical-headed pin 22 (FIG. 8), housed in the slide 20, is thrust by a spring 23 against a twin-groove 24 of lever 18, best seen in FIG. 8. Such an arrangement is thus such as to prevent the lever 18 from being stopped at any intermediate position.

The slide 20 can be positioned in a rearward position as shown in FIG. 1: if so, its lever portion comes into contact with the extension 25 of the trigger 3 thus preventing any pivotal movement of the latter.

The forward position, such as exemplarily shown in FIG. 2, is such that the slide 20 is disengaged from the trigger, thus unlocking same. The two positions of the slide are readily determined by the action of the spring 26 on the pin 27 passed through the slide 20 and further guiding the latter in its sliding slot as formed in the framing 1.

To an upward extension of the trigger 3 is pivoted at 28 a mass 29 which is resiliently urged in one direction by a spring 30: the latter, via a plunger 31, reacts against the trigger body, pivotal movement taking place from a first position, shown in FIG. 1 to a second position shown in FIG. 3.

The member intended to hold the mass 29 in its first position consists, as best seen in FIGS. 3 and 5, of a pawl 32 pivoted to the pin 11 aforementioned. The pawl 32 is resiliently driven in counterclockwise direction in FIG. 3 by a spring 33 which reacts against the framing 1 as shown in FIG. 6. To the pawl 32 is pivoted, at 34, the rocker 35 which carries the dog 36.

As shown in FIGS. 5 and 6, the two hammers 5 and 6 carry, on mutually confronting faces, the protrusions 37 and 38, respectively. These are so arranged that, when the hammer 5 is brought to its cocked position, its protrusion

sion 37 engages the dog 36 in a direction to lift the rocker 35, whereas, as the hammer 6 is brought to its cocked position, the protrusion 38 engages the rocker 35 to rotate the latter downwardly. It is apparent that the separate displacement of either hammer during cocking causes mere pivoting of the rocker 35 about pivot 34. The simultaneous pivotal movement of both hammers from fired position to cocked position, contrariwise, draws the rocker 35 and compels it to follow the movement of said hammers, so that the pawl 32 is driven against the mass 29 until it engages the latter as shown in FIG. 4. The same FIGURE 4 shows the mode of operation of the protrusions 37 and 38 onto the rocker 35. The cross-sectional view of FIG. 5 shows the mutual positions of the protrusion 37 (in side view) and of the protrusion 38 (in dotted lines). Likewise, if either hammer is lifted, upon lifting the other hammer, the rocker 35 is also dragged.

The operation of the device is thus as follows:

When the firing assembly is fully cocked as in FIG. 1, the rifleman effects the selection of the hammer to be released first by means of the knob 17. Thus, by positioning the body 16 beneath the rocker 12, a pressure on the trigger causes pivoting of the rocker, thus disengaging the sear 9 from the hammer 5: the latter strikes the firing pin 5' as shown in FIG. 2. An acceleration directed contrary to the recoil, due to the fact that the shotgun is firmly held during firing, causes the mass 29 to be pivoted against the bias of the spring 30 and the pawl 32 is disengaged from the latch 32' and is retracted by the spring 33. The mass 29, therefore, urged by spring 30, is positioned as shown in FIG. 2, so as to graze the ends of the rockers 12 and 13. At this stage, a depression of the trigger causes pivoting of both 12 and 13 by lifting both the sears 9 and 10. Thus, the not yet lifted hammer, irrespective of which is of the two, is released. In the example shown, the hammer drops onto the firing pin diagrammatically shown at 6' as shown in FIG. 3, where the hammer is shown in dash-and-dot.

The hammers are cocked, for example, automatically: a rotation of the barrels about their common hinge moves, via a pitman 39, the sector 40 which is pivoted at 41 and which lifts both hammers as shown in FIG. 4.

It is thus possible, with the device now described, to select either hammer beforehand and cause the lowering thereof. If a misfiring occurs and no recoil takes place to disengage the mass 29, the other hammer can be immediately released by shifting the selector lever and squeezing the trigger again.

There is, on the other hand, no possibility of having

both hammers released simultaneously: as a matter of fact, if they are lifted, the mass 29 is stably held in its inoperative position by the abutment 32.

This selection is practicable both when the firing assembly is in safety position and in firing position: a single control member used for the selection and for setting the safety position permits a rapid and simplified handling.

I claim:

1. In a double-barreled shotgun having: two hammers, one for firing each barrel, a spring constantly urging each hammer from cocked to fired position, a sear for holding each hammer in cocked position, and a manually-operable pivoted trigger, two rocker members, one engageable with each sear, a selector pivotally mounted on the trigger and adapted to be adjusted to either of two positions in each of which it is disposed to engage one of said rocker members to transmit motion from said trigger, when pivoted, to disengage the associated sear from the associated hammer, an inertia-operated mass pivotally mounted on said trigger separately from said selector, spring means urging said mass from a first to a second position, a spring-operated engagement member for resiliently holding said mass in its first position, said mass being disengaged automatically from said engagement member when said mass is subjected to recoil acceleration upon firing of the shotgun, thereby to move from its first to its second position, said mass, when in its second position, being movable, upon operation of said trigger, to disengage both hammers from their respective sears.
2. A double-barreled shotgun as claimed in claim 1, having additionally an element movable in either of two opposite directions by each of the hammers moving into its cocked position, said element being urged backward to bring said mass to said first position upon movement of both hammers to their cocked positions.

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