May 17, 1949. J. W. NORMAN ET AL 2,470,259

SAFETY DEVICE FOR REVOLVERS

Filed April 2, 1946

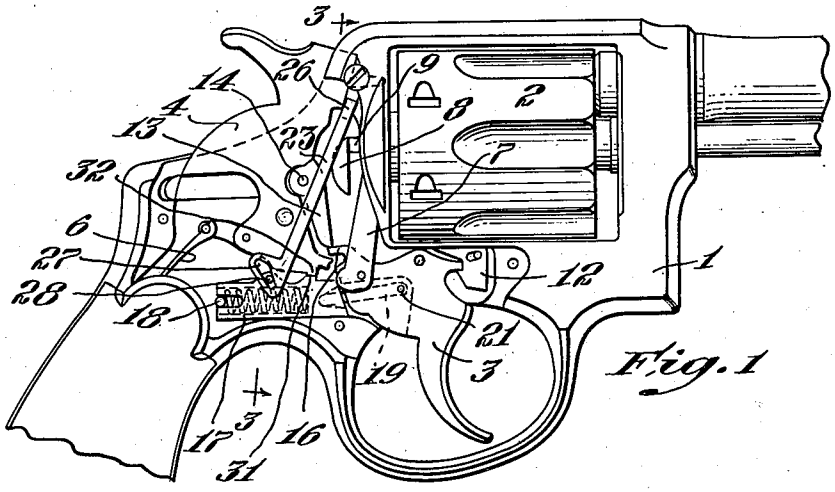


Fig. 1

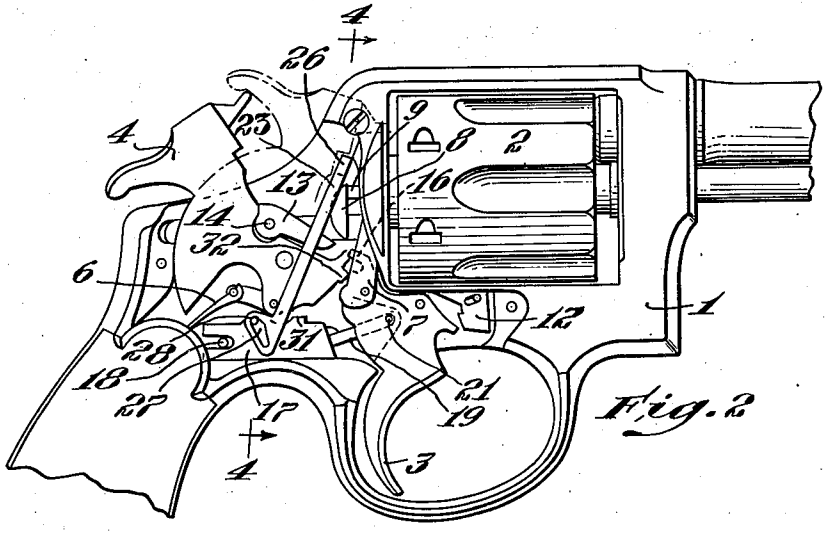


Fig. 2

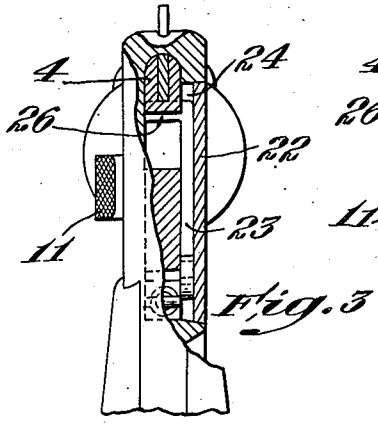


Fig. 3

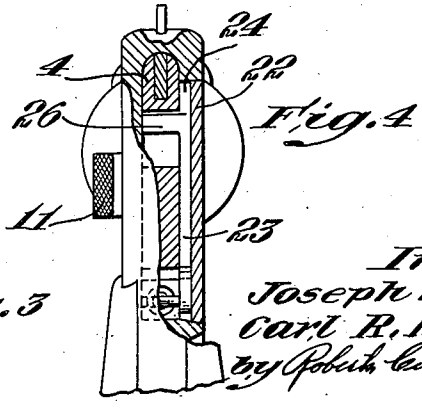


Fig. 4

Inventors
Joseph W. Norman
Carl R. Hellstrom
by Pollock Cushman & Grover
att'ys.

Patented May 17, 1949 2,470,259

UNITED STATES PATENT OFFICE

2,470,259

SAFETY DEVICE FOR REVOLVERS

Joseph W. Norman, Springfield, and Carl R. Hellstrom, Wellesley, Mass., assignors to Smith and Wesson, Inc., Springfield, Mass., a corporation of Massachusetts

Application April 2, 1946, Serial No. 658,944

2 Claims. (Cl. 42—66)

1

This invention relates to firearms of the type having a hammer movable back and forth between firing and cocked position and having an intermediate position, and more particularly to firearms such as revolvers in which, by pulling the trigger, the hammer is moved from intermediate position to cocked position and then released, and in which the hammer is returned from firing position to intermediate position when the trigger is released. While firearms of this type have been relatively safe, they are sometimes discharged accidentally by striking the hammer, as by dropping, when the hammer is in the intermediate position.

Objects of the present invention are to avoid the aforesaid danger and to make it impossible to move the hammer from intermediate to firing position even when the hammer is struck with a heavy blow.

According to the present invention the firearm comprises a safety movable transversely of the path of the hammer into and out of an operative position in the path to obstruct movement of the hammer from intermediate position to firing position, in combination with means for withdrawing the safety from the hammer path when the hammer is moved from intermediate position to cocked position. Preferably the firearm also comprises means for automatically returning the safety to safe position when the hammer is moved from firing position to the intermediate position.

In the preferred embodiment the control means comprises means responsive to rearward movement of the trigger for retracting the hammer from intermediate position to cocked position and withdrawing the safety from the path of the hammer and then releasing the hammer, together with means responsive to forward movement of the trigger for retracting the hammer from firing position to intermediate position and returning the safety to its safe position, the control means including an actuator having means to retract the safety from the gap between the hammer and receiver when the hammer moves from intermediate position to cocked position and means to move the safety into the gap when the hammer moves from firing position to intermediate position.

For the purpose of illustration a typical embodiment of the invention is shown in the accompanying drawings in which

Fig. 1 is a side elevation with the cover plate removed and with the parts in normal position;

Fig. 2 is a similar view showing the hammer cocked and the trigger approaching its rearmost position where it releases the hammer;

2

Fig. 3 is a section on line 3—3 of Fig. 1 with the cover plate in place; and

Fig. 4 is a section on line 4—4 of Fig. 2 with the cover plate in place.

The particular embodiment of the invention chosen for the purpose of illustration comprises a revolver of well-known type having a frame 1, a revolving cartridge holder 2, a trigger 3, a hammer 4, a spring 6 for urging the hammer toward closed position, a feed pawl 7 for rotating the cartridge holder 2 one step when the trigger is retracted, a detent 8 having a forwardly projecting pin 9 for holding the chamber 2 in centered position, the detent being retractable by means of a thumb piece 11 to permit the chamber 2 to swing to one side to be reloaded, a detent 12 for holding the chamber 2 against rotation, the detent being retractable by the trigger to permit the feed pawl 7 to step the chamber ahead one step, a pawl 13 pivoted on the hammer at 14 to cooperate with a nose 16 on the tail of the trigger, an actuator 17 slidable forwardly and rearwardly, the actuator being pressed forwardly by means of an interior coil spring whose rearward end bears against a guide pin 18, a rod or plunger 19 whose forward end is pivoted in a recess in the trigger at 21 and whose rearward end extends into a recess in the forward end of the actuator 17, and a cover plate 22 which is shown in Figs. 3 and 4 but removed in Figs. 1 and 2.

According to this invention the aforesaid safety comprises an elongate body portion 23 slidable in a groove 24 (Figs. 3 and 4) in the inner face of the cover plate 22. At its upper end the safety comprises a lateral arm 26 which is disposed between the forward face of the hammer and the opposing face of the frame when the safety is in the upper position shown in Fig. 1. When the safety is retracted to the lower position shown in Fig. 2 the arm 26 is removed from the path of the hammer so that the hammer can move forwardly to the firing position shown in Fig. 2. At its lower end the safety is enlarged and provided with a cam slot 27 cooperating with a pin 28 on the actuator 17. When the trigger is retracted from the normal position shown in Fig. 1 to the firing position shown in Fig. 2 the safety is cammed from its upper operative position to its lower inoperative position by engagement of the pin 28 with the rear edge of the slot 27, the safety passing completely out of the path of the hammer just before the hammer is released from the trigger at the rear end of its movement to cocked position. When the trigger is released cooperating lugs 31 and 32 on the actuator 17

and hammer 4 respectively cooperate to retract the hammer to intermediate position, the forward shoulder of the lug 31 engaging the rear shoulder of the lug 32 as the trigger starts forward in response to the aforesaid actuator spring (shown in broken lines in Fig. 1). During this initial movement of the actuator, in which the hammer is returned to intermediate position, the pin 28 moves across the wide upper end of slot 27 from the rear face of the slot to the forward face of the slot. Then as the trigger continues forwardly, after the hammer has been returned to intermediate position, the pin 28 returns the safety to its upper operative position shown in Fig. 1 by engagement of the pin 28 with the forward face of the slot 27.

From the foregoing it will be evident that the present invention avoids the danger of an accidental discharge by striking the hammer with a blow, as by dropping, when the hammer is in the intermediate position. The safety 23 moves into the gap between the hammer and the frame immediately after the hammer is returned to intermediate position, and the safety remains in this operative position until the hammer is moved from the intermediate position to cocked position.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

We claim:

1. A firearm comprising a hammer movable back and forth between firing and cocked positions and having an intermediate position, a trigger, means responsive to rearward movement of the trigger for retracting the hammer from intermediate position to cocked position and then releasing the hammer, an actuator member movable along a predetermined path for retracting the hammer from firing position to intermediate position when the trigger is released, and a safety member movable transversely of said path into and out of position to obstruct movement of the hammer from intermediate position to firing position, one of said members having a cam slot and the other member having a pin extending into said slot, said slot having a rear face inclined to the path of the pin carrying member, and a front face more steeply inclined to said path than said rear face, said pin holding said safety member in obstructing position with the trigger in normal position and said rear face camming the safety member into unobstructing position when the trigger is retracted into firing position, and said front face moving the safety member into obstructing position during continued forward movement of the trigger.

2. A firearm comprising a hammer movable back and forth between firing and cocked positions and having an intermediate position, a trigger, means responsive to rearward movement of the trigger for retracting the hammer from intermediate position to cocked position and then releasing the hammer, an actuator movable along a predetermined path for retracting the hammer from firing position to intermediate position when the trigger is released, and a safety movable transversely of said path into and out of position to obstruct movement of the hammer from intermediate position to firing position, said safety having an essentially triangular cam slot, and said actuator having a pin extending into said slot, said slot having a rear face of intermediate inclination to the actuator path, an upper face of slight inclination to said path, and a front face more steeply inclined to said path than said rear face, said pin holding said safety in obstructing position with the trigger in normal position, said rear face camming the safety into unobstructing position when the trigger is retracted into firing position, said upper face camming said safety towards obstructing position while the hammer returns into intermediate position during the initial forward movement of the released trigger, and said front face moving the safety into fully obstructing position during the continued forward movement of the trigger.

JOSEPH W. NORMAN.
CARL R. HELLSTROM.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
609,233	Houghton	Aug. 16, 1898
793,692	Tansley	July 4, 1905
961,188	Wesson	June 14, 1910
961,189	Wesson	June 14, 1910