Nov. 3, 1953 V. A. BROWNING 2,657,490

TRIGGER SAFETY FOR FIREARMS

Filed July 10, 1951

FIG. 1

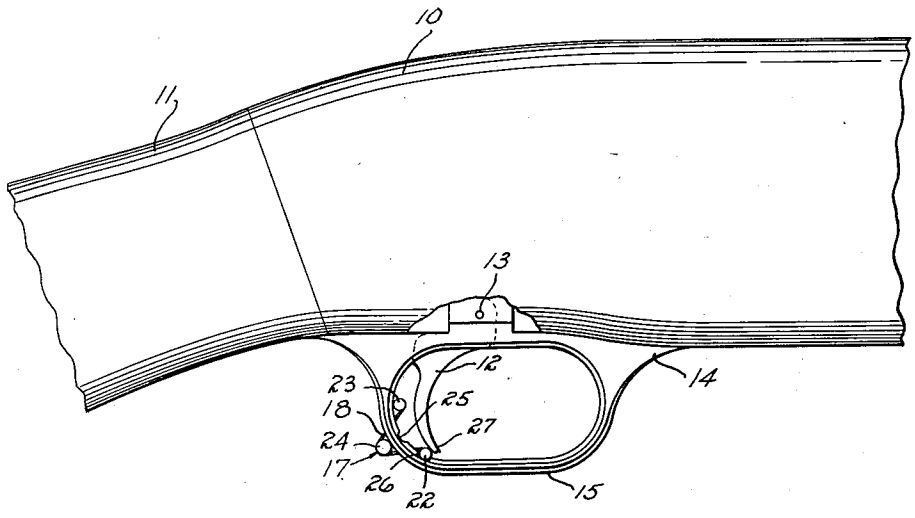


FIG. 2

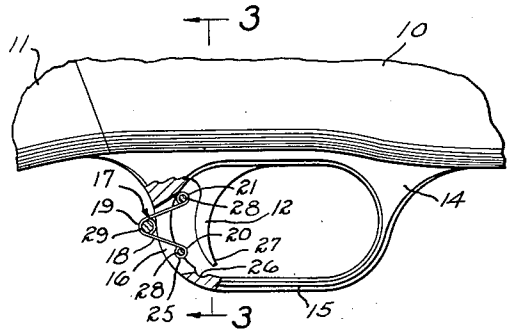


FIG. 3

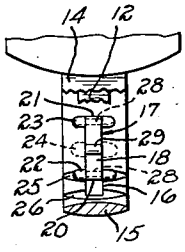


FIG. 4

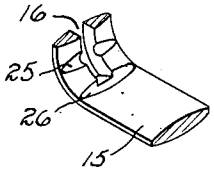
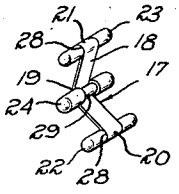


FIG. 5



Inventor

VAL A. BROWNING

By

Lindsey and Prutzman

Attorneys

Patented Nov. 3, 1953

2,657,490

UNITED STATES PATENT OFFICE

2,657,490

TRIGGER SAFETY FOR FIREARMS

Val A. Browning, Ogden, Utah

Application July 10, 1951, Serial No. 235,952

4 Claims. (Cl. 42—70)

1

This invention relates to firearms and more particularly to an improved trigger safety mechanism.

It is the aim of the invention to provide an effective safety mechanism for firearms which may be economically fabricated and assembled; which is characterized by its simplicity; which is arranged for convenient operation whether the firearm be raised in firing position or otherwise held; which can be operated by right or left-handed marksmen holding the firearm in firing position and without requiring adjustment of the hands incident to operation; and which visibly indicates the "on" and "off" positions.

Other objects will be in part obvious, and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the drawings:

Figure 1 is a fragmentary elevational view of a firearm having a trigger safety mechanism constructed in accordance with the present invention and showing the safety in the "on" position;

Fig. 2 is a view similar to Fig. 1 with parts in cross section so as to disclose the details of the safety device which is shown in the "off" position;

Fig. 3 is a cross sectional view taken substantially as indicated by line 3—3 of Fig. 2;

Fig. 4 is a fragmentary perspective view of the rear portion of the trigger guard which accommodates the safety device; and

Fig. 5 is a perspective view of the safety device removed from the firearm.

The safety device of the present invention can be utilized with any type firearm having a trigger operatively disposed within a trigger guard, and in the present illustrative disclosure, a portion of such a firearm is shown, the portion being taken at the joinder of the receiver 10 and the stock 11. The receiver 10 carries a trigger plate 14 which supports the trigger 12 in a conventional manner as by pivot pin 13 and the receiver also supports an integrally formed trigger guard 15 which is spaced about the depending portion of the trigger 12.

In accordance with the present invention, the trigger guard 15 is provided with an elongated slot 16 rearwardly of the trigger 12 to receive the safety device 17. The safety 17 comprises a generally V-shaped spring 18 which is disposed in the slot 16 with its apex 19 projecting rearwardly and with its ends 20 and 21 projecting forwardly of the slot. The ends 20 and 21 secure lower and upper bridging members 22 and 23, respectively, which straddle or bridge

2

the slot 16 on the inner surface of the rear wall of the guard and the apex 19 of spring 18 cradles another bridging member 24 which straddles the slot 16 on the external surface of the rear wall guard 15. In the present illustrative disclosure, the V-shaped spring 18 is in the form of a strip or leaf having its ends 20 and 21 looped or rolled so as to embrace the bridging members 22 and 23, respectively. In this embodiment, the members 22 and 23 comprise equally sized pins or rollers each of which has an annular bearing groove 28 intermediate its ends to accommodate the rolled ends of the spring 18. Thus, the pins or rollers 22 and 23 are rotatably journaled in the spring ends 20 and 21. The bridging member 24 disposed in the apex of the spring 18 is also formed as a pin or roller but is diametrically larger than the rollers 22 and 23. An annular bearing groove 29 is provided intermediate the ends of the roller 24 to accommodate the spring 18 and to permit rotation of the pin 24 relative to the spring and along the outer surface of the guard 15. Thus the movement of the safety along the guard is facilitated by the rotary movement of the pins which act in the manner of roller bearings.

The slot 16 accommodates movement of the safety device 17 along the guard 15 between a raised or "off" position of the safety and a lowered or "on" position of the safety. The guard 15 is provided on its inner surface with an upper transversely disposed indexing notch 25 between the ends of slot 16 and a lower indexing notch 26 which is adjacent the lower end of the slot 16. The notches 25 and 26 are arranged to receive and nest the lower pin or roller 22 in the aforedescribed positions of the safety 17. When the roller 22 is nested in the upper notch 25, the safety is in the "off" position and when the roller 22 is in the lower notch 26, the safety 17 is in the "on" position. In the last mentioned nested position of the safety 17, the roller 22 is disposed rearwardly of the lowermost end portion 27 of the trigger 12 to block rearward movement of the trigger and thereby prevent firing of the firearm.

The safety 17 is assembled on the guard 15 after the rollers 22 and 23 have been journaled by the spring 18. The spring ends 20 and 21 are then squeezed towards each other and the apex of the spring is thrust through the slot 16 from inside the trigger guard and the roller 24 is disposed within the apex externally of the guard while the spring ends are held in the squeezed condition. After insertion of the roller 24, the spring ends are released so that the arms of the spring 18 flex outwardly to bring each of the rollers 22, 23 and 24 into firm engagement with the surfaces of the guard. The roller 24 cannot be inadvertently dislodged from the safety be-

cause of the disposition of the spring 18 in the annular groove 29 which prevents axial movement of the roller 24. The rollers 22 and 23 are likewise secured against axial movement by the disposition of the rolled ends 20 and 21 within the annular groove 28 formed in each of these last mentioned rollers.

The safety device 17 is shifted in slot 16 between the "on" and "off" positions by manipulating the apex 19, thereby moving the roller 24 along the outer surface of the guard 15. As previously mentioned, the safety is in the "on" position when the roller 22 is seated within the notch 26 and is in the "off" position when seated within the notch 25. The roller 22 is seated with a snap-like action in each of the notches due to the resilient construction of the leaf spring 18 and the roller 22 rolls along the inner surface of the guard and along the walls of the notches in the manner of a cam. The safety cannot be displaced from the "on" position by operation of the trigger since the rearwardly directed force on the trigger is transferred to the roller 22 in a direction substantially normal to the bottom of the notch 25. Thus, the roller 22 cannot be cammed out of the lower or "on" notch by movement of the trigger. The snap action of the safety will be felt by the operator or marksman to indicate proper positioning of the safety and, in addition, the disposition of the safety in either of its positions is readily observable.

It should be noted that in the "on" position of the safety, the roller 22 is immediately behind the lower end of the trigger which is the end farthest removed from its pivot. Thus, the possibility of overriding the safety by the application of trigger leverage is removed, another advantage in the foolproof construction of the present safety mechanism.

The safety can be easily operated in any position in which the gun is held. For instance, if the gun is held in firing position with the marksman's index finger closed on the trigger, the safety can be operated by the middle finger which is disposed adjacent operating roller 24 incident to gripping the stock 11. Obviously, the safety can be manipulated to alter its position in either direction without shifting the position of the hands on the gun incident to such operation.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.,

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

1. In a safety for firearms, a trigger guard having a section disposed rearwardly of the trigger and provided with an elongated slot, a generally V-shaped spring disposed in said slot with its apex extending rearwardly of said section and with its ends extending forwardly thereof, an intermediate bridging member disposed in the apex of the spring in straddling relation to the slot and engaging the rear face of said guard section, and a bridging member carried by each end of the spring in straddling relation to the slot and engaging the forward face of the guard section.

2. In a safety for firearms, a trigger guard having a section disposed rearwardly of the trigger and provided with an elongated slot, said guard section having a pair of transverse notches on its forward face, one of said notches being disposed adjacent one end of said slot and the other of said notches being disposed between the ends of said slot, a generally V-shaped spring disposed in said slot with its apex extending rearwardly of said section and with its ends extending forwardly thereof, an intermediate bridging member disposed in the apex of the spring in straddling relation to the slot and engaging the rear face of the section, and a bridging member carried by each end of the spring in straddling relation to the slot and engaging the forward face of the section, said spring being movable within said slot whereby one of the bridging members engaging the forward face of the section is selectively positioned within said notches.

3. In a safety for firearms, a trigger guard having a section disposed rearwardly of the trigger and provided with an elongated slot, said section having a transverse notch on its inner surface, a generally V-shaped leaf spring disposed in said slot with its apex extending rearwardly of said section, said spring having looped end portions extending forwardly from said section, an intermediate roller disposed in the apex of said spring in straddling relation to the slot and engaging the rear face of said section, and a roller carried by each of said looped end portions in straddling relation to the slot and engaging the forward face of said section, said spring being movable within said slot from a safety "on" position wherein one of the rollers engaging the forward face of said section is disposed within said notch to block movement of the trigger and a safety "off" position permitting firing movement of the trigger.

4. In a safety device for firearms, a trigger guard having a section disposed rearwardly of the trigger and provided with an elongated slot, a leaf spring having at each end thereof a bridging member in straddling relation to the slot and slidably engaging one face of said section, and an intermediate bridging member connected to the central portion of said spring and engaging the other face of said section in straddling relation to said slot, said spring being held under stress by said bridging members for resiliently maintaining said bridging members in engagement with the respective faces of said section.

VAL A. BROWNING.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
138,145	Gordon	Apr. 22, 1873
695,574	Mahana	Mar. 18, 1902
782,899	Cleveland	Feb. 21, 1905
920,682	Stephan	May 4, 1909
1,430,662	Lewis	Oct. 3, 1922
1,440,332	Braunger	Dec. 26, 1922

FOREIGN PATENTS

Number	Country	Date
94,472	Germany	Oct. 7, 1897