Aug. 14, 1956 R. B. TABOR 2,758,404

GUN FIRING MECHANISM

Filed May 23, 1950

FIG. 1.

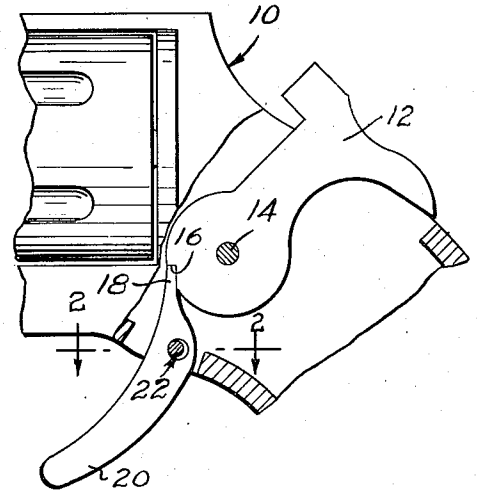


FIG. 2.

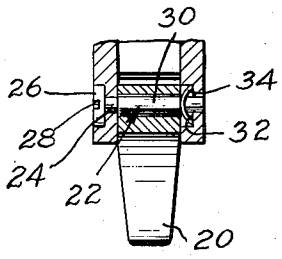


FIG. 3.

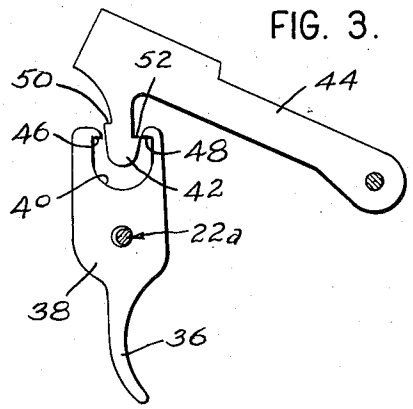


FIG. 5.

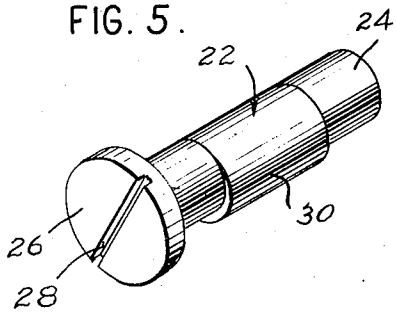
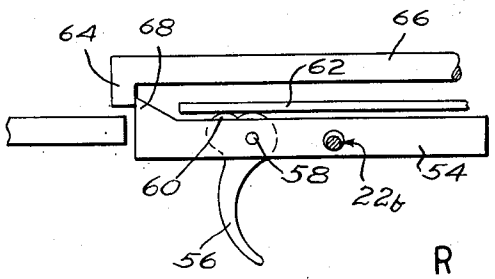


FIG. 4.



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GUN FIRING MECHANISM

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1 Claim. (Cl. 42—69)

The invention relates to means to control the power required to pull the trigger of a firearm, and more particularly to the regulation of the depth to which the sear enters the notch in the firing element.

It is well known in the art that the safety factor in the handling of firearms is greatly increased by increasing the pull required on the trigger in order to discharge the firearm. As a consequence in ordinary practice automatic pistols, revolvers, and the like are built with a trigger pull of something in the vicinity of four to six pounds. It is also well known in the art that the greater the trigger pull, the less accurate becomes the firing of the weapon. As a consequence firearms employed for target practice are built with trigger pressures of from one and one-half to two pounds, thus sacrificing safety for accuracy. The result is that sportsmen and others engaged in the handling of firearms find the ordinary firearm possessing a trigger pull of from four pounds up wholly inadequate for target shooting, particularly in competition, or where accuracy is the most highly desirable quality. Since the trigger pressures are built into the firearms at the time of manufacture, it is evident that any alteration of trigger pressures requires the services of a competent gunsmith and entails considerable expense and loss of time. As a result it is customary for sportsmen and others to equip themselves with two or more firearms, certain of which are set for ordinary use while others are equipped with trigger pulls of low values for target use. Consequently large sums of money are tied up in the duplication of firearms in order to produce safety in one and accuracy in the other.

The primary object of this invention is to avoid the necessity of employing separate weapons for ordinary service and for target shooting.

Another object is to avoid the necessity of investing large sums of money in firearms and to enable one piece to serve the dual purpose of target shooting and also ordinary service.

A further object is to enable the user to regulate in a single piece, or firearm, the pressure required to pull the trigger thereof.

The above and other objects may be attained by employing this invention which embodies among its features a pivot pin on which one element of the firing action of a firearm is mounted to oscillate, and an eccentric on the pivot pin for changing the position of the axis about which oscillates the element mounted on the pivot pin, thus to increase or diminish the area of contact of the sear with the wall of the notch in the element of the firearm that is to be released.

Other features include means on the pivot pin and accessible from the exterior of the firearm for rotating the sear pin and altering the position of the axis about which the element oscillates, and means engaging the firearm and the sear pin to cause the sear pin to resist rotation so that once the trigger pressure has been determined and satisfactorily set, the adjustment will remain.

In the drawings:

Figure 1 is a fragmentary sectional view through a portion of a conventional revolver showing this invention applied thereto,

Figure 2 is a transverse sectional view taken substantially along the line 2—2 of Figure 1,

Figure 3 is a schematic view showing this invention applied to a typical semi-automatic firing action,

Figure 4 is a schematic view showing this invention applied to a conventional bolt action such as is employed in a rifle, and

Figure 5 is a perspective view of a sear pin embodying the features of this invention.

Referring to the drawings in detail a typical revolver designated generally 10 is equipped with a conventional hammer 12 which is mounted to oscillate about a pivot 14 and has formed therein a notch 16 for engagement by the sear 18 at the end of a conventional trigger 20. The trigger 20 oscillates about a pivot pin 22 which in the present embodiment of this invention comprises a cylindrical shank 24 carrying at one end a head 26 having a transverse slot 28 extending thereinto for receiving a screw driver, the edge of a coin or the like to facilitate the turning of the pin 22 about the axis of the cylindrical portion 24. Formed intermediate the ends of the cylindrical portion 24 is an eccentric bearing surface 30 upon which the trigger 20 is mounted to oscillate. It will thus be seen that by rotating the pivot pin 22 about the axis of the cylindrical portion 24, the eccentric 30 will cause the position of the axis about which the trigger 20 oscillates to be altered, and thus the depth to which the sear 18 enters the notch 16 may be varied.

Mounted within the frame 32 and surrounding the cylindrical portion 24 adjacent the end thereof opposite the head 26 is a bowed spring 34 which bears against the inner side of one wall of the frame and against one end of the eccentric 30 so as to hold the pivot pin 22 against accidental rotation through frictional contact therewith. Obviously the pressure exerted by the bowed spring 34 on the end of the eccentric 30 must be sufficient to overcome any tendency of the pin 22 to rotate as the trigger 20 oscillates.

In the modified form of the invention illustrated in Figure 3, a trigger 36 is equipped with a conventional sear 38 having a notch 40 in its end remote from the trigger in which a keeper 42 for a hammer 44 is received. The sear 38 is provided with inwardly extending shoulders 46 and 48 which engage notches 50 and 52 carried by the keeper 42 to hold the hammer 44 against firing movement. The sear 38 is mounted on a sear pin 22*a* which is constructed in accordance with the sear pin 22 so that by rotating the pin, the axis about which the sear 38 oscillates may be altered to thereby govern the area of contact of the hook portions 46 and 48 with the shoulders 50 and 52 on the hammer 44. In this way the pressure required to pull the trigger 36 may be varied to suit the requirements of the user.

In the modified form of the invention illustrated in Figure 4 the pivot pin 22*b* is employed in a manner somewhat similar to the pivot pin 22, and mounted on the eccentric surface of the pivot pin 22*b* for oscillation thereabout is a sear 54 to which a trigger 56 is pivoted as at 58. This trigger is provided with an ear 60 which engages a fixed portion 62 of the rifle to which the invention is applied, and consequently by exerting pull on the trigger 56, the ear 60 will contact the fixed portion 62 and cause the sear 54 to oscillate about the pivot pin 22*b*. When the rifle is cocked, the hook 64 on the firing pin 66 is engaged by the upwardly projecting dog 68 on the pivot to hold the firing pin retracted. Pull on the trigger 56 of course will rock the sear about the pivot pin 22*b* to disengage the dog 68 from the hook 64 on the firing pin to

release the latter and allow it to advance into gun discharging position. Obviously by rotating the pin 22*b* which is constructed in accordance with the pin 22, the position of the axis about which the sear oscillates will be altered so as to alter the area of contact of the lug 68 with the hook 64 of the firing pin. Like the pivot pin 22 the pivot pins 22*a* and 22*b* are equipped with heads which are accessible from the exterior of the piece, or firearm, so as to enable the pivot pin to be rotated to alter the axis about which the sear operates. With the parts assembled as shown, it is evident that the area of contact of the sear with the wall of the notch may be varied, thus enabling the pressure at which the trigger releases the firing mechanism to be varied according to the desires of the user.

While in the foregoing there has been shown and described the preferred form of this invention, it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

I claim:

In a gun firing mechanism, a hammer having an enlarged circular inner end portion, a pivot pin passing through the center of said end portion, said end portion having a peripheral cock notch, a trigger of arcuate form having a reduced upper end portion engageable with said notch to hold the hammer at cocked position, said trigger having an aperture adjacent the inner end of said reduced portion, a second pivot passing through said aperture, an enlargement of eccentric form in cross-section intermediate the ends of said second pivot and engaged in said aperture, a circular head on an end of said second pivot to facilitate turning the latter to regulate the firing moment of the trigger by varying the degree of engagement of said reduced end portion of the trigger with said notch, and an annular dished spring element engaged on the opposite end of said second pivot and bearing against the near end of said enlargement to prevent accidental turning of the second pivot from a set position.

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