TRIGGER PULL CONTROL FOR DOUBLE ACTION FIREARMS

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FIG. 1

FIG. 3

FIG. 2

FIG. 4

FIG. 5

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TRIGGER PULL CONTROL FOR DOUBLE ACTION FIREARMS

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The present invention generally relates to new and useful improvements in double action firearms, particularly but not necessarily, revolvers, and has for its primary object providing a novel and as hereafter set forth, a hand gun of this type comprising novel means for yieldedly arresting the trigger after the hammer has been cocked by the trigger in a double action manner and is about to be released, thus giving the shooter an opportunity to steady or draw his aim just before completing the trigger pull and firing the cartridge.

Another highly important object of this invention is to provide a gun of the aforementioned character wherein the trigger pull control may quickly be rendered inoperative if desired, for example, as for relatively slow, deliberate firing or shooting.

A further object is to provide a firearm trigger pull control of the character described which may be incorporated in conventional guns without necessitating material structural alterations therein.

Other objects are to provide a trigger pull control of the character set forth which is comparatively simple in construction, strong, durable, compact, of lightweight, and which may be manufactured at low cost.

All the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

FIGURE 1 is a fragmentary view in side elevation, partially in section, of a revolver having a trigger pull control embodying the present invention, showing a hidden portion of the trigger in dotted lines and showing the rearward position of the trigger in dotted lines.

FIGURE 2 is a substantially similar view showing a modification, with parts broken away and partly in section for illustrative clarity.

FIGURE 3 is a view of another modification, partly in section.

FIGURE 4 is a side elevational view, showing still another embodiment of the invention, partly cross-sectional and partly in outline.

FIGURE 5 is a fragmentary side elevational view of a further modification, partly in section.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawings in detail, it will be seen that reference numeral 5 designates generally a portion of a conventional revolver. The revolver 5 includes the usual frame 6, a guard 7, and a trigger 8 operable in said guard. The trigger 8 has a conventional arcuate finger-engaging portion which is surrounded by portions of the frame 6 and the guard 7. A hidden portion of the trigger 8 is shown in dotted lines at 8a and will be described in more detail hereinafter. It will be understood that the trigger 8 is pivotally or otherwise secured to the frame 6 for movement between a first inoperative position as shown in full lines in FIGURE 1, a second hammer-cocking position wherein any conventional means (not shown) operatively interconnecting the hammer and the trigger for cocking the hammer defining the first action, is actuated, and a third hammer-releasing position wherein any conventional means (not shown) operatively interconnecting the hammer and the trigger for releasing the hammer defining the second action, is actuated for firing the weapon. The details of the double-acting mechanism form no part of the instant invention, any conventional construction being capable of modification is in accordance with the instant inventive concept to yieldably arrest the trigger after the hammer has been cocked and before it is released. A double acting mechanism of the type referred to showing the relationship between the trigger and the hammer is shown and fully described in the U.S. Letters Patent issued to J. D. Buchanan No. 2,324,674, dated July 20, 1943.

In the embodiment of the present invention illustrated in FIGURE 1 of the drawing, the finger-engaging portion of the trigger 8 is provided at an intermediate point with a threaded bore 9. The bore 9 includes an enlarged, smooth or unthreaded counterbore 10 providing a shoulder 11.

A screw member 12 is threaded and mounted for adjustment in the bore 9. On its rear end, a shank or screw member 12 includes a metallic head 13 in the form of a disc having fixed thereon a yieldable member comprising a pad 14 of rubber or other suitable resilient material.

On its forward end, the screw member 12 further includes a relatively small head 15 which is operable in the counterbore 10 for engagement with the shoulder 11. It is thought that the operation of the invention as thus far described will be readily apparent from consideration of the foregoing. Briefly, with the screw member 12 in the rearwardly projected or extended operative position shown, the trigger 8 is pressed rearwardly in the usual manner to the second position for cocking the hammer (not shown) of the gun 5. When the trigger 8 passes the position where the hammer is cocked and before it reaches the third position where the hammer is released for firing, as shown in broken lines in FIGURE 1 of the drawing, the resilient pad 14 contacts the frame 6 of the revolver 5. Thus, the trigger 8 is yieldingly stopped or arrested. In this manner the shooter is warned through the increased resistance to the trigger finger that the hammer is about to be released for firing the cartridge and is thus given an opportunity to steady or correct his aim, if necessary, before completing the trigger pull. The head 15 is adapted to abut and bind on the shoulder 11 for frictionally securing the screw member 12 in the operative position illustrated. To render the device inoperative as for relatively slow, single action shooting, the screw member 12 is threaded forwardly in the bore 9 for engaging the head 13 with the back of the trigger 8. In this position the resilient pad 14 will not contact the frame 6 of the revolver 5 at any time before firing and the trigger 8 is free to function in the usual manner. The resilient pad 14 may contact the frame 6 after the shot has been fired but this will in no way interfere with the person firing the revolver.

In the embodiment of FIGURE 2 of the drawing, the shank or screw member 16 is mounted in a threaded bore 17 which is provided therefor in the finger-engaging portion of the trigger 23 of a revolver 24. The screw member 16 comprises on its rear end a head or disc 18 having an off-center socket or recess 19 the purpose of which will be presently set forth. The bore...
3

17 is substantially similar to the bore 9 of FIGURE 1 in that it includes an enlarged counterbore 20 which is smooth or unthreaded and which provides a shoulder 21. The screw member 17 further includes, on its forward end, a relatively small head 22 which is operable in counterbore 20 and frictionally engages at the shoulder 21.

Adjacent to and rearwardly of the finger-engaging portion of the trigger 23, the frame 25 of the revolver 24 has formed therein a threaded bore 26 which is open at both ends. The bore 26 is in the path of the finger-engaging portion of the trigger 23 and threadedly mounted for adjustment in the forward end portion of said bore is a removable barrel or sleeve 27. A headed plunger 28 is slidably mounted in the barrel or sleeve 27 and projects forwardly therefrom for engagement by disc or head 18 of the contact screw or member 16. A removable plug 29 is threadedly mounted for adjustment in the rear end portion of the bore 26. A coil spring 30 is mounted under compression into bore 26 between the plug 29 and the plunger 28 for yieldingly urging said plunger 28 forwardly in the barrel or sleeve 27.

The head or disc 18 of the screw member 16 in the rotatably adjusted position shown, the socket or recess 19 receives the projecting forward end of the plunger 28 as shown in dotted lines and the pull of the trigger may be completed as for single action shooting. Thus, the control is inoperative. However, for double action shooting, the head or disc 18 of the screw member 16 is rotatably adjusted sufficiently to move the socket or recess 19 out of position to receive the plunger 28. It is to be understood that the screw member 16 is of sufficient length to allow this slight angular adjustment. The small head 22 may bind against the shoulder 21 in one position of adjustment and the disc 18 may bind against the rear of the trigger 23 (which is preferably flattened for this purpose) in the other position. When the initial movement of the trigger 23 is completed, the head or disc 18 contacts the projecting forward end of the spring-pressed plunger 28 and the trigger 23 is yieldingly arrested or stopped before the hammer is released. After steadying or correcting his aim, if necessary, the shooter may complete the final movement of the trigger 23 for firing the gun. Thus, when a slight additional pressure from the trigger finger is applied for completing the final movement of the trigger 23, the coil spring 30 is compressed by the plunger 28. The threaded sleeve or barrel 27 permits the plunger 28 to be adjusted forwardly or rearwardly in the bore 26. Then the compression of the coil spring 30 may be regulated as decided through the medium of the plug 29.

It is to be understood that the threaded bore 26 may be closed at its rear end and the plug 29 deleted. The sleeve or barrel 27 would be secured in place in the forward part of the bore 26 in any conventional manner and the device would not be adjustable. The plunger 28 would be resiliently mounted behind the sleeve 27 in the same manner as shown in FIGURE 2 but the spring 30 would abut the rear end of the bore rather than the plug 29.

Referring now to the modification of FIGURE 3 of the drawing, reference numeral 31 designates the finger-engaging portion of a revolver trigger with a bore 32 therein. A stem or shank 33 is secured to disc or head 34 and is mounted for limited rotation in the bore 32. A segmented circumferential groove or channel 35 in the shank or stem 33 receives a transverse retaining pin 36 in the trigger 31. The disc or head 34 is substantially similar to the corresponding element 18 of the embodiment of FIGURE 2 in that it includes an off-center socket or recess 37 for the reception of a spring-pressed plunger similar to the plunger 28. A spring-pressed ball detent 38 in the trigger 31 is engageable in a recess or socket 39 in the disc or head 34 for releasably securing the same in the inoperative position shown. If desired, the disc or head 34 may include two or more of the sockets 39 for receiving the detent 38 for securing said disc or member in several positions.

In use, the disc or head 34 is rotated to the position shown and the detent 38 snaps into the socket or depression 39 for releasably securing said disc against rotation. This form of the invention then functions substantially in the manner of the embodiment of FIGURE 2 of the drawing, the socket or recess 37 receiving the plunger 28 when the control is not to function. The circumferential groove or channel 35 in the stem or shank 33 is of sufficient length to permit the disc or member 34 to be rotated between its operative and inoperative positions.

In the modification of FIGURE 4 of the drawing, reference numeral 40 designates a revolver trigger having a smooth or unthreaded bore 41 defined in its finger-engaging portion and rotatably and adjustably receiving the stem or shank 42 of a contact member 43. The contact member 43 comprises a disc 44 on one end of the stem or shank 42. A pin 45 transversely through the trigger 40 is engaged in a segmented circumferential groove 46 provided therefor in the stem or shank 42 for mounting the shank 42 in the trigger 40 for limited rotation. The disc 44 is provided with an off-center socket or depression 47 for the reception of the plunger similar to 28 in the embodiment of FIGURE 2. A spring washer or disc 48 of suitable resilient metal is mounted over contact member 43 behind the head or disc 44. The spring washer 48 includes a radial rib 49 which is engageable in a groove 50 in the disc 44 for frictionally securing said disc in the inoperative position shown. If desired, the disc 44 may comprise a second groove (not shown) for receiving the rib 49 for securing the disc 44 in operative position.

The operation of the modification of FIGURE 4 is substantially the same as the operation of the embodiments of FIGURES 2 and 3 of the drawing. That is, with the socket 47 in position to receive the plunger 28, the pull control of the present invention is inoperative. To render the invention operative, the disc 44 is rotatably adjusted for moving the socket 47 out of position to receive the plunger 28, the face of the disc 44 engaging the plunger 28 to be yieldingly arrested thereby after the second hammer-cocking position is passed and before the third hammer-releasing position is reached. If necessary, the spring washer 48 may be retained in any suitable manner against rotation in union with the disc 44, as by welding or soldering the spring washer 48 to the trigger 40.

The modification of FIGURE 5 is similar to the device shown in FIGURE 1 and includes a revolver trigger 50 having a finger-engaging portion with a threaded bore 51 part way therethrough. A stem or shank 52 is threaded at its ends and has a grooved portion 53 adapted to receive a transverse pin 54 secured to the trigger 50. At the rear of the shank 52 a metallic head 55 is secured, with a yieldable member or resilient pad 56 affixed thereto similar to elements 13 and 14 in FIGURE 1. The grooved portion 53 is sufficient in length to allow the threaded shank 52 to be rotated between an inoperative position as shown in FIGURE 5 wherein the pin 54 engages the rear of the grooved portion and an operative position (not shown) wherein the pin 54 engages the forward end of the grooved portion 53. The resilient pad 56 is thereby extended rearwardly for contact with the revolver frame in a manner similar to the embodiment of FIGURE 1. It will be noted that with this embodiment it is not necessary to cut through to the front face of the finger-engaging portion of the trigger 50 thereby leaving the same relatively flat and smooth for contact with the finger of the person firing the gun.

In firing a revolver or the like equipped for both single and double action shooting, it will be found that it is necessary to retract the trigger a greater amount about its pivot point to cock the hammer in single action firing than in double action firing. It is conventional for
the trigger to have separate members such as those designated by the reference numerals 8b and 8c in FIGURE 1 to cock the hammer in single and double action shooting, respectively. It has been found that by cutting off or shortening the member 8b, or by adding onto or lengthening the member 8c, the trigger 8 can be made to release the hammer (not shown) in approximately the same position regardless of whether single or double action firing is taking place. This expedient will allow the trigger pull control device of the instant invention to be rendered inoperable with very little change in its adjustment greatly facilitating a switch from double to single action shooting.

It is to be understood that although each trigger is slightly different in form, the design shown in FIGURE 1 approximating the conventional Smith & Wesson trigger, they all have members similar in function to those shown at 8b and 8c which may be modified to have the trigger release the hammer in the same position regardless of which type of firing is being done.

Since the remainder of the revolver mechanism is conventional and well known, it is not believed necessary to set it forth in detail. It is believed that the many advantages of a trigger pull control embodying the present invention can readily be understood and since only preferred embodiments of the invention are illustrated and described, it is to be understood that any modifications and changes in the details of construction may be resorted to which will fall within the scope of the invention as claimed.

I claim:
1. In combination, a firearm comprising a double acting trigger and a frame, a disc mounted for rotary adjustment on said trigger and a spring actuated plunger slidably mounted in said frame adjacent said trigger and engageable with said disc for yieldingly arresting said trigger at a point between the actions thereof, said disc having an off-center socket defined therein for the reception of said plunger for rendering said disc inoperative.

2. In combination, a firearm comprising a double acting trigger and a frame, said trigger having a through bolt defined therein including an enlarged, unthreaded counterbore providing an internal shoulder, a shank threadedly mounted in said bore and including a head on one end frictionally engageable with said shoulder, a disc on the outer end of said shank frictionally engageable with said trigger, and a spring actuated plunger slidably mounted in said firearm frame behind said trigger and engageable with said disc for yieldingly arresting said trigger at a point between the actions thereof, said disc having an off-center socket defined therein for rendering said disc inoperative.

3. The combination of claim 2, together with means for releasably securing said disc in rotatably adjusted position, said means including a spring-pressed detent in said trigger, said disc having a recess defined therein receiving said detent.

4. The combination of claim 3 together with means for releasably securing said disc in rotatably adjusted position, said means comprising a resilient washer mounted on said shank between said disc and said trigger and fixed to said trigger, said resilient washer including a radial rib, and said disc having a groove defined therein for receiving said rib.

5. In combination, a firearm including a frame, a hammer, a trigger having a finger-engaging portion, portions of said frame at least partially surrounding said finger-engaging portion of said trigger, means connecting said trigger to said frame for movement between a first inoperative position, a second hammer-cocking position, and a third hammer-release position, means operatively interconnecting said hammer and said trigger for cocking said hammer when said trigger is moved to said second position, means operatively interconnecting said hammer and said trigger for releasing said hammer when said trigger is moved to said third position, and means yieldably arresting the movement of said trigger intermediate said second and third positions, said last-mentioned means including a threaded bore in the finger-engaging portion of said trigger, a counter-bore communicating with said threaded bore and with said threaded bore defining a shoulder therebetween, a shank threadably engaging said threaded bore, a head on one end of said shank and engageable with said shoulder for frictionally securing said shank in an operative position, and a yieldable member carried on the other end of said shank, said shank being dimensioned to engage said yieldable member with said portions of said frame surrounding said finger-engaging portion of said trigger after said trigger is moved past said second position and before said trigger reaches said third position, said shank being rotatable in said threaded bore whereby said yieldable member may be adjusted to an inoperative position wherein it will not engage said frame portion until after said trigger is moved past said third position.

6. The structure according to claim 6 in which said finger-engaging trigger portion has a front face and a rear face, said threaded bore extending inwardly of said rear face, a transversely disposed pin extending across said threaded bore and carried by said trigger portion, said shank having a groove thereon receiving said pin, the sides of said groove constituting shoulders engageable by said pin for limiting the adjustment movement of said shank.

7. The structure according to claim 6 in which said last-mentioned means includes a disc rotatably carried by said finger-engaging portion of said trigger, and a spring-biased plunger carried by an adjacent portion of said frame, said disc being spaced from said plunger in said first and second positions and engageable with said plunger upon execution of movement of said trigger to a position beyond said second position and approaching said third position.

8. The structure according to claim 8 in which said disc includes an off-center socket for receiving therein said plunger whereby said disc is rendered inoperative.

9. The structure according to claim 8 in which said disc is provided with a recess and in which said trigger portion is provided with a spring-biased detent engageable in said recess for releasably holding said disc in one position of adjusted rotation.

10. The structure according to claim 8 in which said disc is provided with a groove, together with a resilient washer mounted between said trigger portion and said disc, said washer having at least one rib engageable in said groove to releasably hold said disc in one position of adjusted rotation.

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