

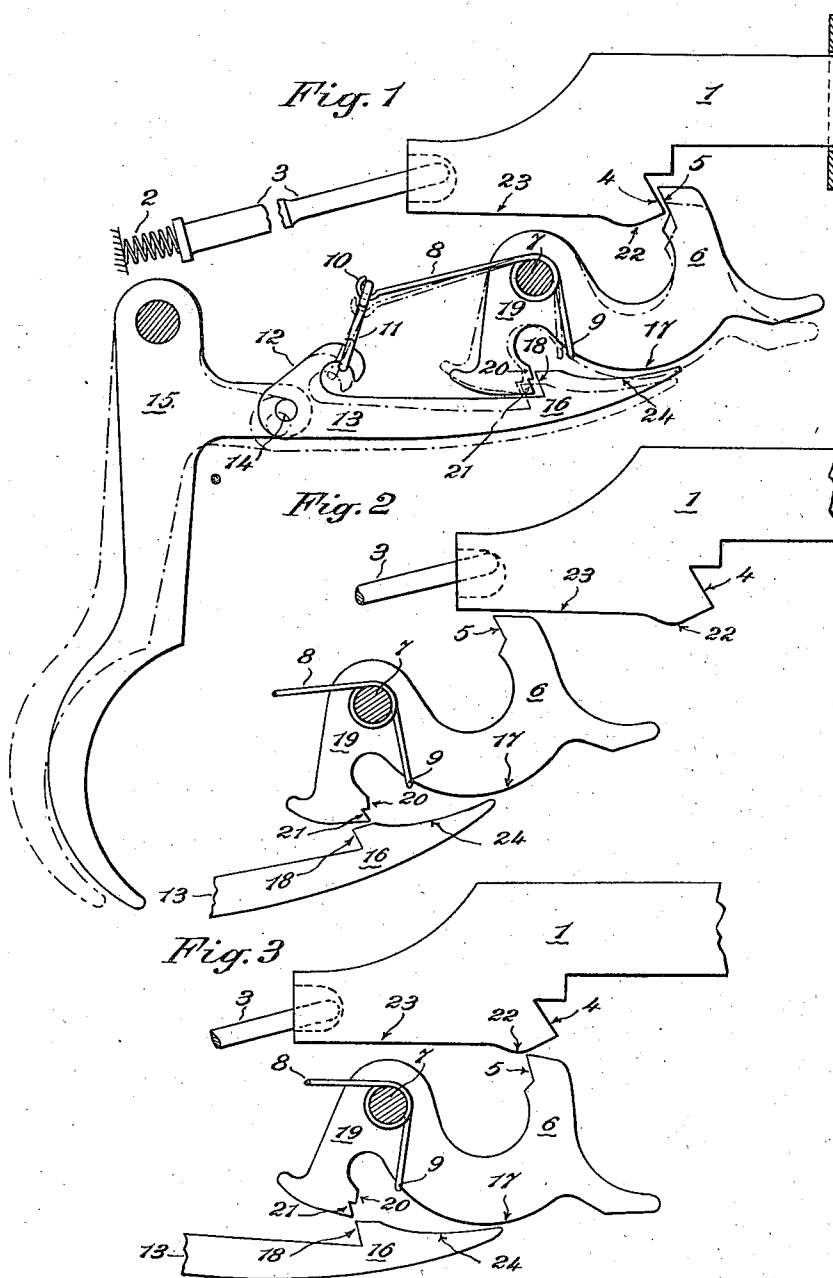
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FIRING MECHANISM FOR AUTOMATIC ARMS

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FIRING MECHANISM FOR AUTOMATIC ARMS

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2 Claims. (Cl. 42—69)

The present invention relates to automatic guns and more specifically pertains to the firing mechanism or trigger linkage for releasing the firing pin.

An object of the invention resides in providing means for preventing inadvertent discharge of the gun even though the trigger may be maintained in an actuated position.

A more specific object of the invention resides in the provision of a pivotal pawl which normally maintains the firing pin in a retracted position including means for pivoting the pawl upon actuation of the trigger and means for further pivoting the pawl to release the same from the trigger linkage so that the pawl may again retain the striker or firing pin in a retracted position even though the trigger is not released.

Other objects and features of the invention will be apparent from a consideration of the accompanying drawing and the following description wherein an exemplary embodiment of the invention is disclosed.

In the drawing:

Fig. 1 is an enlarged elevational view of the firing mechanism showing the parts thereof in a cocked position of the firing pin or striker with the parts shown in dotted lines after the striker has been released.

Fig. 2 is a similar elevational view of part of the mechanism shown in Fig. 1 after the striker or firing pin has been moved to a position to discharge the gun.

Fig. 3 is a side elevational view of the parts shown in Fig. 2 and illustrating the positions thereof during the initial forward movement of the striker.

Referring to the drawing there is shown at 1 a striker or firing pin which is urged forwardly by means of a spring 2 and a rod 3. The striker or firing pin 1 is adapted to be retracted upon discharge of the gun in a conventional and well known manner.

The striker 1 carries a tooth 4 which is adapted to engage the surface 5 of an arm carried by a pawl 6. The pawl or sear 6 is pivotally mounted on a pin 7 and the pawl is biased in a counterclockwise direction on the pin 7 by means of a spring 8. An end 9 of the spring engages the pawl 6 and another end 10 of the spring is connected by means of a link 11 to an arm 12 of a lever 13. The lever 13 is pivotally connected at 14 to a pivotal trigger 15. The lever or connector 13 is provided with an arm 16 which extends along the lower part of the pawl 6 and the finger-shaped arm 16 is adapted to bear against the lower part

17 of the pawl 6. The lever 13 is biased to such a position by means of the spring 8 which is connected to the arm 12 by the link 11. The finger portion 16 of the lever 13 is also provided with an arcuate surface 24 for engaging the cam-like surface 17 of the pawl 6.

The lever 13 is also provided with detent means such as a tooth 18 designed to engage a lug 19 of the pawl 6. The lug 19 is provided with two substantially flat surfaces 20 and 21 arranged in slightly different planes and adapted to be successively engaged by the tooth 18 of the lever 13. The various parts of the trigger release mechanism are retained in the position illustrated in the full lines of Fig. 1 when the striker is in a retracted position by the spring 8. In such a position the finger portion 16 of the lever 13 bears against the lower part 17 of the pawl 6 and the tooth 4 of the striker 1 engages the end surface 5 of the pawl and the striker or firing pin is thus retained in a retracted position.

When the trigger 15 is actuated and moved to the dotted line position shown in Fig. 1 the lever 13 is moved rearwardly and slightly downward and the tooth 18 engaging the surface 20 pivots the pawl 6 in a clockwise direction on the pin 7. The tooth or detent 18 during further rearward movement of the lever 13 finally engages the surface 21 of the lug 19. The finger actuating the trigger 15 will perceive this first release of the firing mechanism. During these movements of the lever 13 the pawl 6 will be slightly pivoted and the surface 17 of the pawl 6 will still be adjacent the surface 24 of the lever 13.

Further actuation of the trigger 15 will cause the pawl 6 to be pivoted in a clockwise direction sufficiently for the tooth 4 to be released by the pawl and the striker 1 will therefore move forward under the action of the spring 2. The initial forward movement of the striker 1 will cause the cam-like projection 22 to engage the pawl 6 as shown in Fig. 3. The cam or projection 22 will thus further pivot the pawl 6 in a clockwise direction on the pin 7 and move the lug 19 away from the detent or tooth 18 as shown in Fig. 3.

Thus the pawl 6 is completely disconnected from the lever 13 and the pawl 6 will thereafter be rotated in a counterclockwise direction on the pin 7 by means of the spring 8. The upper end 5 of the pawl 6 may then engage the relatively straight surface 23 of the striker 1.

Further forward movement of the striker will cause the discharge of the gun after which the striker or firing pin is retracted by the recoil of

the gun. The retracted striker 1 however cannot again move forwardly under the action of the spring 2 since the pawl 6 with the surface 5 thereof will be in a position to be engaged by the tooth 4 of the striker. Thus the gun will not be again discharged even though the trigger 15 is not released. In order to again release the firing pin 1 it is necessary to permit the trigger 15 to assume an inoperative position whereby the detent 18 will again engage the lug 19.

While the invention has been described with reference to specific structural details it will be appreciated that changes may be made therein by those skilled in the art. Such modifications may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

I claim:

1. In an automatic gun, a striker having a tooth, yieldable means biasing the striker forwardly, a sear, a pivot pin, adjacent said striker, on which said sear is mounted, said sear being constructed and arranged to engage said tooth

to hold said striker in retracted position, said sear being formed with a lower cam surface and with a lug, a trigger pivotally mounted rearwardly of the sear, a connector pivotally connected to said trigger forwardly of the pivotal axis of the trigger and extending along said cam surface and formed with a detent constructed and arranged to engage said lug to move said sear from holding position, and a spring coiled about said pin and having its ends connected with said sear and connector respectively and bearing upwardly thereagainst and thereby biasing said sear to holding position, said connector to a position with said detent in engagement with said lug and said trigger to forward position, said striker being formed with a cam surface constructed and arranged to further move said sear and by said first mentioned cam surface to disengage said detent from said lug.

2. The gun as set forth in claim 1 wherein said lug is formed with two stepped surfaces adapted to be engaged successively by said detent.

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