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MACHINE GUN AND CONVERTER THEREFOR

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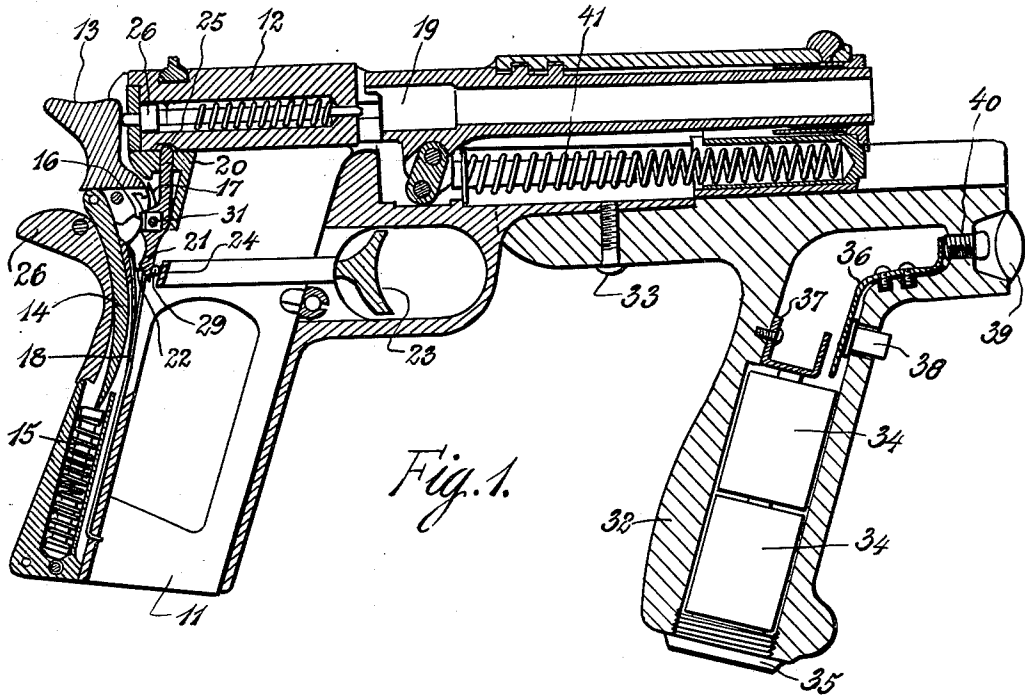


Fig. 1.

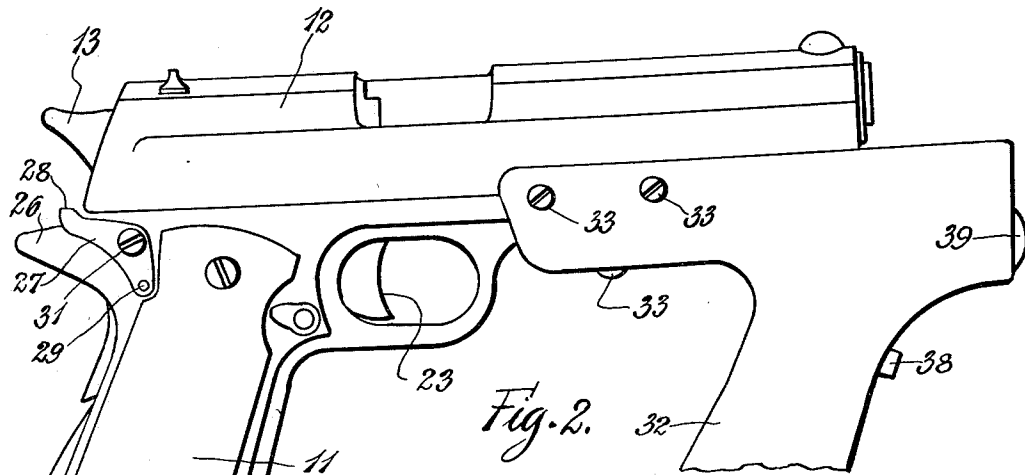


Fig. 2.

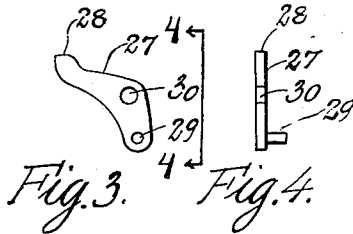


Fig. 3.

Fig. 4.

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MACHINE-GUN AND CONVERTER THEREFOR

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9 Claims. (Cl. 42-69)

My invention relates to machine-guns and to devices for converting other fire-arms into machine-guns.

More specifically my invention consists in utilizing the motion of the recoiling parts of a fire-arm, acting against the natural resiliency of the trigger-finger of the person firing the arm, to automatically release the safety mechanism of the fire-arm, and to discharge the same in regular sequence.

Also it is my object to provide means for holding the fire-arm in a safe position during rapid firing; and, in combination therewith, means for throwing a spotting beam of light, to assist in aiming the piece.

In addition to the foregoing objects, I have worked out a number of novel and useful details, which will be readily evident as the description progresses.

My invention consists in the novel parts, and in the combinations and arrangements thereof—and especially in one certain part—which are defined in the appended claims; and of which one embodiment is exemplified in the accompanying drawing, which is hereinafter particularly described and explained.

Throughout the description, the same reference number is applied to the same member or to similar members.

Figure 1 illustrates a lengthwise vertical section of my invention.

Figure 2 illustrates a side elevation of my invention.

Figure 3 illustrates a side elevation of the converter of my invention.

Figure 4 illustrates a front elevation of the converter, taken along the lines 4-4 of Figure 3.

Referring to the drawing, and more particularly to Figure 1, it will be seen that this figure illustrates the conventional Colt automatic pistol of the United States Army, with certain modifications which will become evident as the description progresses. The Colt pistol, although officially called "automatic", is really merely semi-automatic, i. e. autoloading and cocking only.

The normal operation of such a pistol will now be briefly sketched. Reference may be made to the well-known operation of this fire-arm for further details.

A loaded magazine (not shown) is placed in the handle 11. This magazine normally contains seven cartridges, impelled upward by a spring; but my invention contemplates elongating this magazine so as to contain fourteen or more cartridges.

The slide 12 is then drawn rearward (i. e., to the left in the figure) by hand. This action swings the hammer 13 counter-clockwise, depressing the hammer-strut 14 against compression of the mainspring 15. The notch 16 on the hammer, catches on the upper point of the sear 17, the sear being forced counter-clockwise into engagement by the action of one leaf of the sear-spring 18.

The slide 12 is then let forward, under the influence of counter-recoil spring 41, thus forcing a cartridge (not shown) into the chamber 19, in a manner well known, and not constituting a part of my invention.

While the slide 12 was in its rearward position, the lower edge of the slide, by engaging the top of the disconnecter 20, forced it down so that its lower end 21 came below the lower end 22 of the sear 17. If, at such time, the trigger 23 had been pressed, the rear end 24 of the trigger slide would have pushed the lower end 21 of the disconnecter harmlessly below the lower end 22 of the sear, and the pistol would not have been discharged.

But, with the slide 12 in returned forward position, and the upper end 20 of the disconnecter consequently seated in the notch 25 on the lower side of the slide (the disconnecter being forced upward by the second leaf of the sear-spring 18), the lower end 21 of the disconnecter is now in sufficiently raised position to engage the lower end 22 of the sear if the trigger be pulled, and thus trip the point 17 of the sear out of the notch 16 of the hammer, thus permitting the hammer 13 to fall upon the firing-pin 26, and discharge the piece.

The forces of recoil throw the slide 12 rearwardly again, thus cocking the hammer 13 as before. And the counter-recoil puts another cartridge in the chamber 19.

But, although the trigger 23 still be held pressed, as the lower edge of the slide 12 forces down the head 20 of the disconnecter, so that the lower end 21 of the disconnecter is forced below the level of the lower end 22 of the sear, thus permitting the sear to rotate counter-clockwise to cock the piece, and preventing the continued pressure on the trigger from discharging the piece.

There is another safety device, involving the grip-safety 26, which is not involved in my invention, and hence will not be described, although its original operation is in no way impaired by the introduction of my invention.

If, after the slide has fully returned to its forward position, the trigger is released, the lower end 21 of the disconnecter will move forward and

upward, under the influence of the sear-spring 18, until it again engages the front edge of the lower end 22 of the sear, ready to fire upon renewed pressure of the trigger.

5 I have added to the conventional Colt piston the converter 27 shown in Figures 3 and 4, in which 28 is the cam, 29 the pin and 30 the hole for the pivot-screw 31.

I cut a slot in the side of the handle of the pistol for the pin 29, and insert it so that it will engage the rear of the trigger-slide 24, as shown in Figure 1. Such is the width of the trigger-slide that the pin does not interfere with the disconnecter, although it appears to do so in the figure.

15 The converter 27 is shown in position in Figure 2.

Its action is as follows. The trigger 23 fires the piece as before. But, the instant that recoil takes place, the lower edge of the slide 12 engages the cam 28 of the converter 27, thus rotating it counter-clockwise, and forcing the pin 29 forward. This motion of the pin forces the trigger forward against the pressure of the trigger-finger of the man, thus disengaging the trigger-slide 24 from the disconnecter 21, and permitting the disconnecter to return to firing-position the instant that counter-recoil is completed.

This utilization of the spring action of the trigger-finger of the man is one of the features 30 of my invention.

The pin 29 holds the trigger inoperative against the pressure of the trigger-finger. But, the instant that counter-recoil is completed, the cam 28 is free to move upward again, and consequently 35 the pressure of the trigger-finger immediately again discharges the piece.

As a result, shots occur rhythmically with the cadence of recoil and counter-recoil of the piece.

The use of my converter has quite a different 40 result from what would obtain if the disconnecter were omitted, and the trigger-slide were lengthened to bear directly against the sear. For, in that case, the sear would merely be held out of engagement with the notch on the hammer, and 45 the hammer would return at counter-recoil, with a force which might or might not discharge the piece. Whereas, in my invention, the hammer is successively cocked and positively discharged. Thus my invention is in no sense a mere undoing 50 of the function of the disconnecter, but rather is the adding of an entirely new function and of the mechanism for performing it.

But it is well-known that the Colt pistol, and particularly its most popular size, the 45, recoils with each shot into a position in which the hand 55 which holds it is close to the right side of the firer's head, and the pistol is pointing diagonally upward to the rear. If, by virtue of my invention as thus far described, the second shot were to occur when the piece was in this position, the 60 result might be disastrous.

Accordingly I have added a second handle 32, secured to the piece by screws 33, or by means of brazing.

65 And, to obtain a further function, I have made this auxiliary handle hollow for the reception of dry-cells 34, held in place by a cap 35.

Two contacts 36 and 37, a button 38, a lens 39, and a light-bulb 40, complete the picture. 70 The lens and bulb are so disposed that a ray of light cast by the bulb will fall just where a bullet would land.

This enables me to sweep the dark with my beam of light, and put a burst of bullets into my objective the instant that the beam falls upon it,

Having now described and illustrated one form of my invention, I wish it to be understood that my invention is not to be limited to the specific form or arrangement of parts hereinbefore described, except insofar as such limitations are 5 specified in the appended claims.

I claim:

1. In a machine-gun, having the conventional parts including stock, barrel, chamber, maga- 10 zine, and means for ejecting exploded cartridges and for inserting new cartridges into the chamber the combination of: a slide; a hammer, so proportioned and positioned that the rearward motion of the slide, under the influence of recoil, will cock the hammer; means to lock the hammer 15 cocked; a trigger, so proportioned and positioned that, after being pulled to fire the gun, it must move forward before it will be in condition to fire again; means, under the influence of the recoil of the slide, to thus move the trigger forward against the pressure of the trigger-finger 20 of the operator, but leave it held in operative position against the pressure of the trigger-finger of the operator; and means, under the influence of the counter recoil of the slide, to free the 25 trigger for firing, under the influence of continued pressure of the trigger-finger.

2. In a machine-gun, having the conventional parts including stock, barrel, chamber, maga- 30 zine, and means for ejecting exploded cartridges and for inserting new cartridges into the chamber, the combination of: a slide, a hammer, so proportioned and positioned that the rearward motion of the slide, under the influence of recoil, will cock the hammer; a sear, to lock the 35 hammer cocked; a trigger; a disconnecter, so proportioned and positioned as to operatively connect the trigger to the sear when counter-recoil is completed, and to disconnect the trigger from the sear during recoil, and to maintain that dis- 40 connection until the trigger is moved forward; means, under the influence of the recoil of the slide, to thus move the trigger forward against the pressure of the trigger-finger of the opera- 45 tor, but leave it held in operative position against the pressure of the trigger-finger of the operator; and means, under the influence of the counter-recoil of the slide, to free the trigger for firing, under the influence of continued pressure of the 50 trigger-finger.

3. In a machine-gun, the combination of: a hammer; a sear; a trigger; a disconnecter, so 55 proportioned and positioned as to operatively connect the trigger to the sear when counter-recoil is completed, and to disconnect the trigger from the sear during recoil, and to maintain that dis- connection until the trigger is moved forward; a recoiling part to actuate the disconnecter; and 60 means, under the influence of the recoiling part, to move the trigger forward against the pressure of the trigger-finger of the operator, during recoil and hold it released until the completion of counter-recoil.

4. The combination, with a conventional semi-automatic fire-arm, of means, consisting of an 65 adapter operatively connecting a recoiling part with the trigger, whereby the movement of the recoiling part will be transmitted to shift the trigger in the release direction against the pressure of the trigger-finger of the operator during 70 recoil, and hold it thus shifted until the completion of counter-recoil.

5. In an attachment for converting a conventional semi-automatic pistol into a machine-gun, the combination of: a plate; a pivot therefor; a 75

projection from the upper portion of the plate, to engage the under edge of the slide of the pistol during recoil and counter-recoil, thereby forcing and holding the upper portion of the plate to the rear and its lower portion forward, and releasing and permitting the upper portion of the plate to move forward and its lower portion to move rearwardly upon the completion of counter-recoil; and a projection from the lower portion of the plate, engaging the rear of the trigger of the pistol, thereby forcing and holding the trigger forward against the pressure of the trigger-finger of the person firing the pistol during recoil and counter-recoil, and releasing the trigger for firing under continued pressure of the trigger-finger upon the completion of counter-recoil.

6. In an attachment for converting a conventional semi-automatic pistol into a machine-gun, the combination of: a pivoted element; a projection therefrom, for engaging a recoiling element of the pistol; and a second projection from the pivoted element, for forcing the trigger of the pistol forward against the trigger-finger of the operator; whereby the trigger is moved into pre-firing position against the pressure of the trigger-finger of the operator and is held inoperative during recoil and counter-recoil, and is instantly released for firing under continued pressure of the trigger-finger of the operator, upon the completion of counter-recoil.

7. In an attachment for converting a conventional semi-automatic pistol into a machine-gun, the combination of: a pivoted element; a projection therefrom, for engaging the slide of the pis-

tol; and a second projection from the pivoted element, for engaging the trigger of the pistol, whereby the trigger is moved into pre-firing position against the pressure of the trigger-finger of the operator and is held inoperative during recoil and counter-recoil, and is instantly released for firing under continued pressure of the trigger-finger of the operator, upon the completion of counter-recoil.

8. In an attachment for converting a conventional semi-automatic pistol into a machine-gun, the combination of: an actuated element, actuated by a recoiling element of the pistol; an actuating element, engaging the trigger of the pistol, to shift the trigger in the release direction against the pressure of the trigger-finger of the operator during recoil, and hold it thus shifted until the completion of counter-recoil, and thereupon to free the trigger for action under the pressure of the trigger-finger of the operator; and an operative connection between the actuated element and the actuating element. 10
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9. The combination with a semi-automatic fire-arm, in which the trigger must be released between successive shots; of means, actuated by the recoil of a recoiling part, said means consisting of a converter operatively connecting said recoiling part with the trigger, whereby to force the release of the trigger against the tension in the trigger-finger of the operator, and to permit this tension to pull the trigger upon the completion of counter-recoil; whereby the fire-arm is rendered fully automatic. 25
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