Aug. 28, 1945. J. M. COLBY 2,383,471

FIRING GRIP

Filed June 27, 1942 2 Sheets-Sheet 1

Fig. 1.

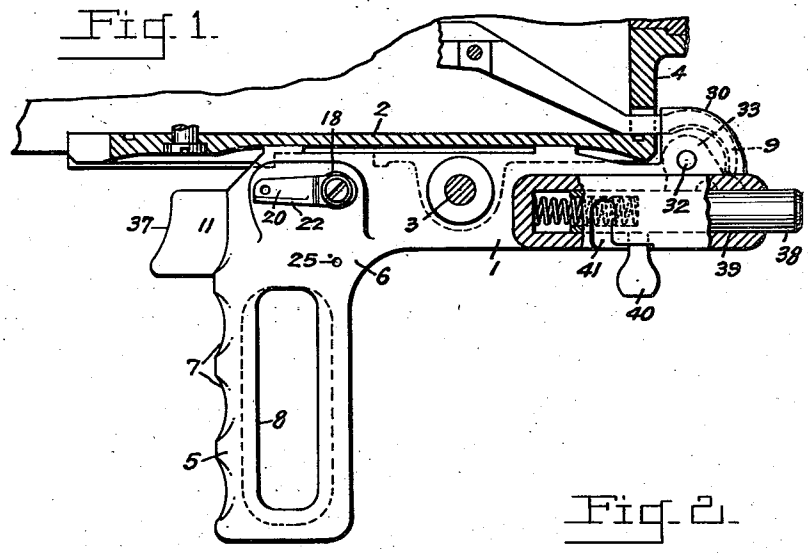


Fig. 2.

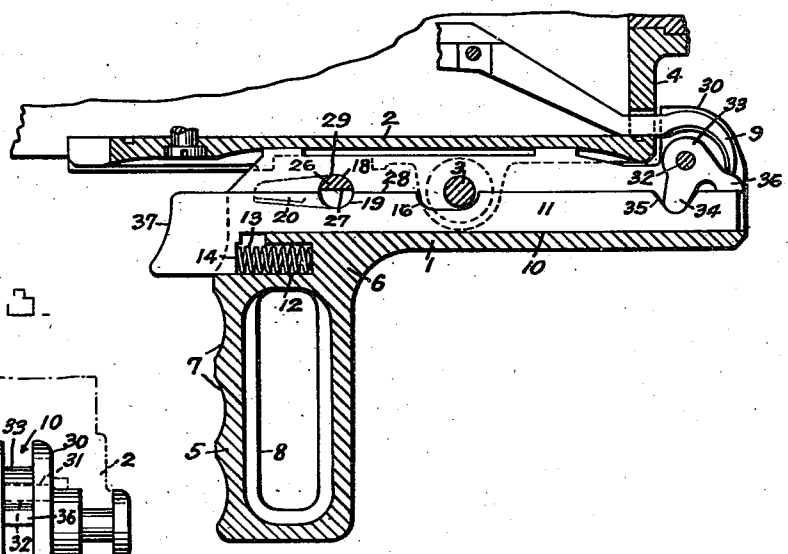
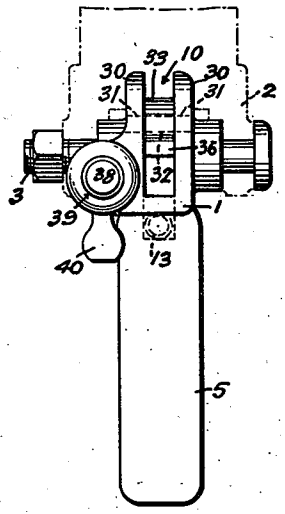


Fig. 3.



Inventor

Joseph M. Colby

By G. J. Kesenich & J. H. Church

Attorneys

Aug. 28, 1945. J. M. COLBY 2,383,471

FIRING GRIP

Filed June 27, 1942 2 Sheets-Sheet 2

Fig. 4.

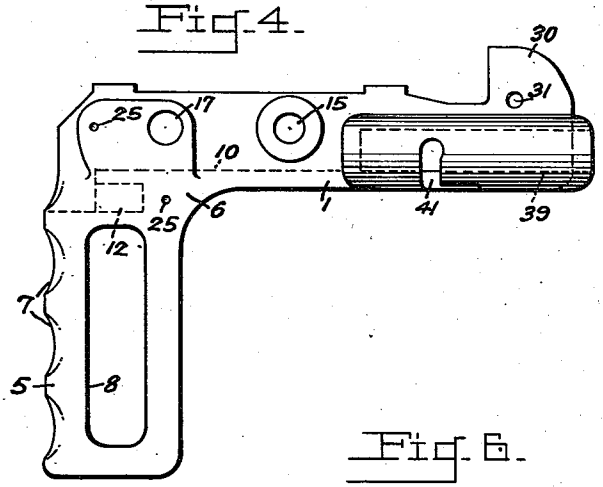


Fig. 5.

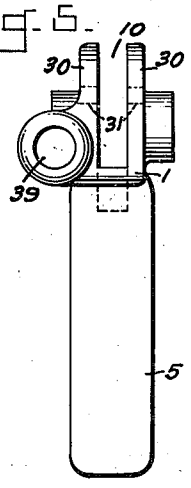


Fig. 6.

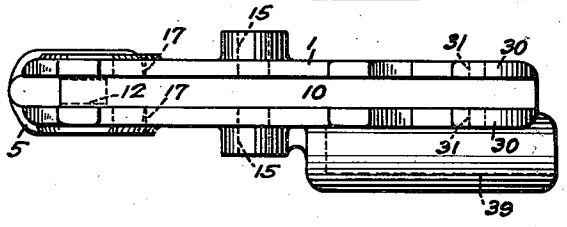


Fig. 7.

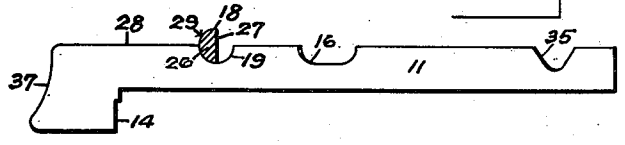


Fig. 8.

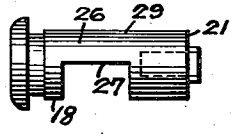


Fig. 9.

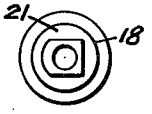


Fig. 12.

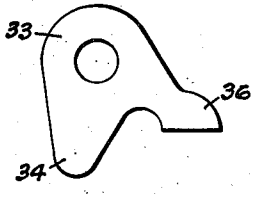


Fig. 10.

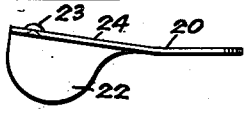
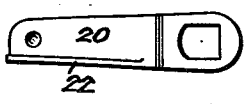


Fig. 11.



Inventor
Joseph M. Colby

By G. J. Kessenich & J. H. Church

Attorneys

Patented Aug. 28, 1945 2,383,471

UNITED STATES PATENT OFFICE

2,383,471

FIRING GRIP

Joseph M. Colby, United States Army,
Lake Mills, Iowa

Application June 27, 1942, Serial No. 448,827

6 Claims. (Cl. 89—27)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a firing grip and more particularly to a grip for manipulating and firing a machine gun.

The purpose of the invention is to provide a firing grip which is adapted for use on a standard machine gun to permit its adroit operation in the confined space in an armored device.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawings in which:

Fig. 1 is a view in side elevation and partly in section showing the grip mounted on the rear end of a machine gun,

Fig. 2 is a central vertical section through the grip shown in Fig. 1,

Fig. 3 is an end view of the grip attached to the gun,

Figs. 4, 5, and 6 are respectively, side elevational, end elevational, and plan views of the body portion of the grip,

Fig. 7 is a side elevational view of the trigger actuating slide,

Figs. 8 and 9 are views of the rotary slide lock respectively in side and end elevation,

Figs. 10 and 11 are respectively the plan and side elevational views of the lever for controlling the slide lock, and

Fig. 12 is a view in side elevation of the trigger operating cam.

Referring to Figs. 1, 2 and 4, the firing grip comprises a horizontal body portion 1 which is secured to the under side of a machine gun 2 by a bolt and nut araringement 3 at a point near the rear end 4 of the gun. A vertical pistol grip 5 depends from the front end 6 of the body and has a series of arcuate notches 7 to accommodate the fingers of the operator. The pistol grip 5 is preferably an elongated ring-shaped member having a central opening 8 which is adapted to receive the tips of the gunner's fingers thereby permitting a more positive hold on the grip. This is of considerable advantage during swift movements of the gun about its universal mounting. The rear portion of the grip mechanism is conditioned to engage the trigger 9 of the machine gun in a manner which will be described later.

The body portion 1 is provided with a longitudinal guide channel 10 in its upper face; see Figs. 5 and 6. This guide channel is adapted to receive a reciprocating trigger actuating slide 11 shown in Figs. 1, 2 and 7. The front portion 6 of the grip has a horizontal bore 12 (Fig. 2) which receives a coiled spring 13 that bears on a shoulder 14 positioned near the front end of the trigger actuating slide 11. The body portion 1 of the grip is provided with a pair of alined transverse apertures 15 (Fig. 6) which receive the bolt and nut arrangement 3 (Fig. 3) for securing the grip to the gun. An elongated notch 16 appears in the upper face of the trigger slide 11 so that interference with the bolt arrangement and the reciprocating slide will not exist.

A pair of alined apertures 17 in the upper portion of the grip 1 receive a rotary lock 18 for the trigger slide 11; see Figs. 1, 6 and 8. This lock is adapted to selectively clear or engage an arcuate notch 19 in the slide as shown in Figs. 2 and 7. The lock 18 is a bolt-like element which is actuated by a thumb lever 20 that is coupled to the left hand end 21 of the lock as viewed in Figs. 1 and 9. Lever 20 is a spring steel member which is arranged to be swung through a 90° angle by pressure on its flange portion 22; see also Figs. 10 and 11. The lever is slightly offset inwardly and has a protuberance 23 on the inner face 24 which is adapted to be seated in either of a pair of recesses 25 spaced 90° apart on the grip 1, see Figs. 1 and 4. These recesses determine the limits of travel of the lever 20 and also function with the lever as a latch to secure the rotary lock 18 in either its operative or inoperative position.

Rotary lock 18 has an intermediate shank portion 26 which is semi-circular in cross section. When the lever 20 is in the position shown in Figs. 1 and 2, the flat face 27 of the lock parallels and clears the top face 28 of the trigger slide 11, and the curved face 29 is uppermost. Relative reciprocating movement between the slide and the lock is then permissible. When the lever 20 is swung downwardly through an angle of 90° and the protuberance 23 is lodged in the lower recess 25, the curved face 29 of lock 18 is in engagement with the arcuate notch 19 so that the slide 11 is incapable of reciprocation in the guide channel 10 as is illustrated in Fig. 7

The upper rear of the body portion 1 of the grip carries a pair of ears 30 on opposite sides of the guide channel 10. Aligned bores 31 in the ears receive a pin 32 which rotatably supports a cam 33; see Figs. 1, 2 and 12. Cam 33 has a

depending finger 34 which rests in a wide-mouth notch 35 in the rear of the trigger slide 11. A posterior finger 36 on the cam 33 is adapted to engage the free end of the trigger 9 of the gun 2. The trigger actuating slide 11 is provided with an inwardly curved surface 37 at its front end to accommodate the trigger finger of the gunner.

A spring urged bolt or plunger 38 is arranged to reciprocate in a cylindrical bore 39 at the rear of the grip body 1. A manually operated knob 40 which is secured to the side of the bolt is adapted to slide in an L-shaped slot 41 thereby controlling the release of the bolt from the bore. When the gun is not in use this bolt is employed to secure the rear portion of the gun to a fixed support (not shown) which is provided with a bolt receiving aperture.

The operation of the device is as follows: With the firing grip secured to the gun as previously mentioned, the operator by grasping the pistol grip 5 with one hand is able to swing the gun with dexterity and ease whereby he may train the gun to bear upon an objective. With the thumb lever 20 in the position shown in Figs. 1 and 2, as a result of which the trigger actuating slide 11 is free to reciprocate in its guide channel 10, the gun may be fired by squeezing with the trigger finger on the curved surface 37 at the front end of the slide. This pushes the slide backward against the resistance of spring 13 which bears against the shoulder 14. As the slide is displaced rearwardly it swings the trigger operating cam 33 counterclockwise about fixed pin 32 since the depending finger 34 engages the wide mouth notch 35 in the tail portion of the slide. This elevates the posterior finger 36 of the cam which contacts the trigger 9 of the gun and moves it to the firing position.

When the gunner releases the pressure imparted by his trigger finger on the curved surface 37 of the slide 11, the compressed spring 13 elongates and forces the slide to the left as viewed in Fig. 1. Notch 35 in the tail end of the slide is displaced in the same direction and carries with it the finger 34 of the trigger operating cam 33. This swings the posterior finger 36 down the top of the slide 11 and permits the trigger to return to its inoperative position thereby causing the gun to cease firing. The posterior finger 36 and the bolt 3 and notch 16 prevent finger 34 from being moved out of the notch 35 thereby preventing the slide 11 from being removed from channel 10 when the assembled grip is attached to the gun.

The firing mechanism is again ready for instant use with the lever in the position shown in Fig. 1. However, it may be desired to lock that mechanism in a safety position. By rotating the lever 20 through a 90° angle to a vertical position, the lock 18 is introduced into notch 19 in the trigger actuating slide 11 whereupon the slide is positively secured against movement which could actuate the trigger 9 and fire the gun.

When it is desired to place the trigger mechanism in the firing position, lever 20 is flipped forward by the operator's thumb to the location shown in Figs. 1 and 2 where the lever is latched in the upper recess 25. Squeezing the trigger slide will operate the gun as previously mentioned. Thus the gun may be made ready for instant use and is under complete control of a single hand of the operator. This is an important feature as it is particularly adapted for use on a gun mounted in an armored device since the gunner's left hand is needed to perform other operations such as movement and control of a rotary cupola or turret during traverse.

I claim:

1. The combination with a machine gun having a trigger extending rearwardly therefrom, of a body detachably secured to the underside of said machine gun adjacent said trigger and formed with a pistol grip and guide ways, a spring urged trigger slide disposed in said guide ways having one end extending outwardly from said pistol grip whereby said trigger slide may be moved on said ways by a finger of the hand grasping said pistol grip and a cam member engaging said trigger and said trigger slide whereby said trigger is actuated upon movement of said trigger slide.

2. The combination set forth in claim 1 wherein locking means operable by a finger of the hand grasping said pistol grip is provided for said slide member.

3. The combination with a machine gun having a trigger extending rearwardly therefrom, of a body detachably secured to the underside of said machine gun adjacent said trigger and formed with a pistol grip and guide ways, a spring urged, notched trigger slide disposed in said guide ways having an end thereof extending outwardly from said pistol grip whereby said trigger slide may be moved on said ways by a finger of the hand grasping said pistol grip, and a cam member engaging the notched portion of said trigger slide and also said trigger whereby said trigger is actuated upon movement of said trigger slide.

4. The combination with a machine gun having a trigger extending rearwardly therefrom, of a body detachably secured to the underside of said machine gun adjacent said trigger and formed with a pistol grip and guide ways, a trigger slide disposed in said guide ways having a notch on the upper side thereof and having one end thereof extending outwardly from said pistol whereby said trigger slide may be moved on said ways by a finger of the hand grasping said pistol grip, resilient means to maintain said trigger slide in inoperative position, a cam member engaging said trigger and said trigger slide whereby said trigger is actuated upon movement of said trigger slide, a cut-away pin engaging the notch in said trigger slide for locking said slide against movement and a thmb lever on said pin disposed exteriorly of said body for rotating said pin.

5. The combination with a machine gun having a trigger extending rearwardly therefrom, of a body detachably secured to the underside of said machine gun adjacent said trigger and formed with a pistol grip and guide ways, a trigger slide disposed in said guide ways having notches on the top surface thereof and having one end thereof extending outwardly from said pistol grip whereby said trigger slide may be moved on said ways by a finger of the hand grasping said pistol grip, a rotatable cut-away pin engaging one of the notches in said trigger slide for locking said trigger slide against movement and a two-arm cam member engaging said trigger and another of the notches of said trigger slide for actuating said trigger upon movement of said trigger slide.

6. The combination set forth in claim 5 wherein said cam member has one arm thereof engaging the notch in the upper portion of said trigger slide and the other arm engaging the surface of said trigger slide and also said trigger.

JOSEPH M. COLBY.