May 4, 1943. J. C. TROTTER 2,318,130

MOUNT FOR MACHINE GUNS

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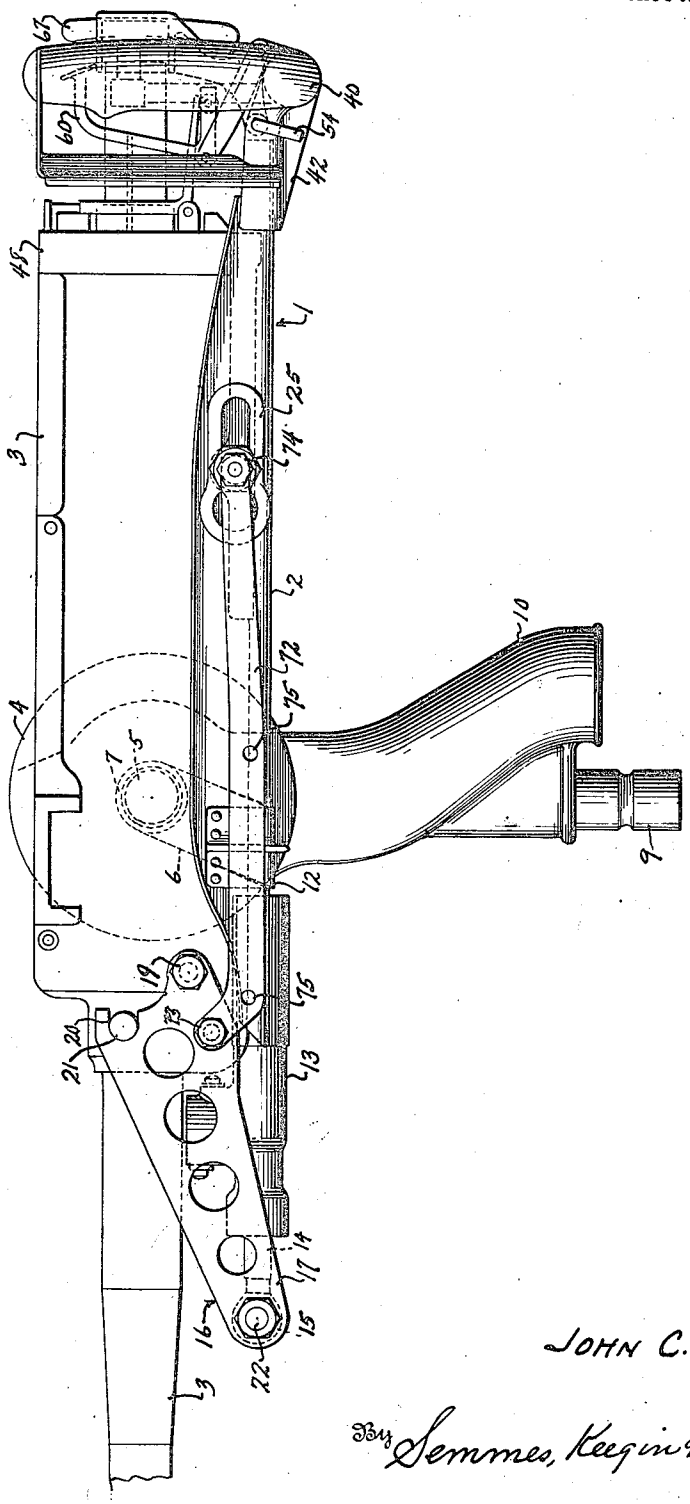



FIG. 1.

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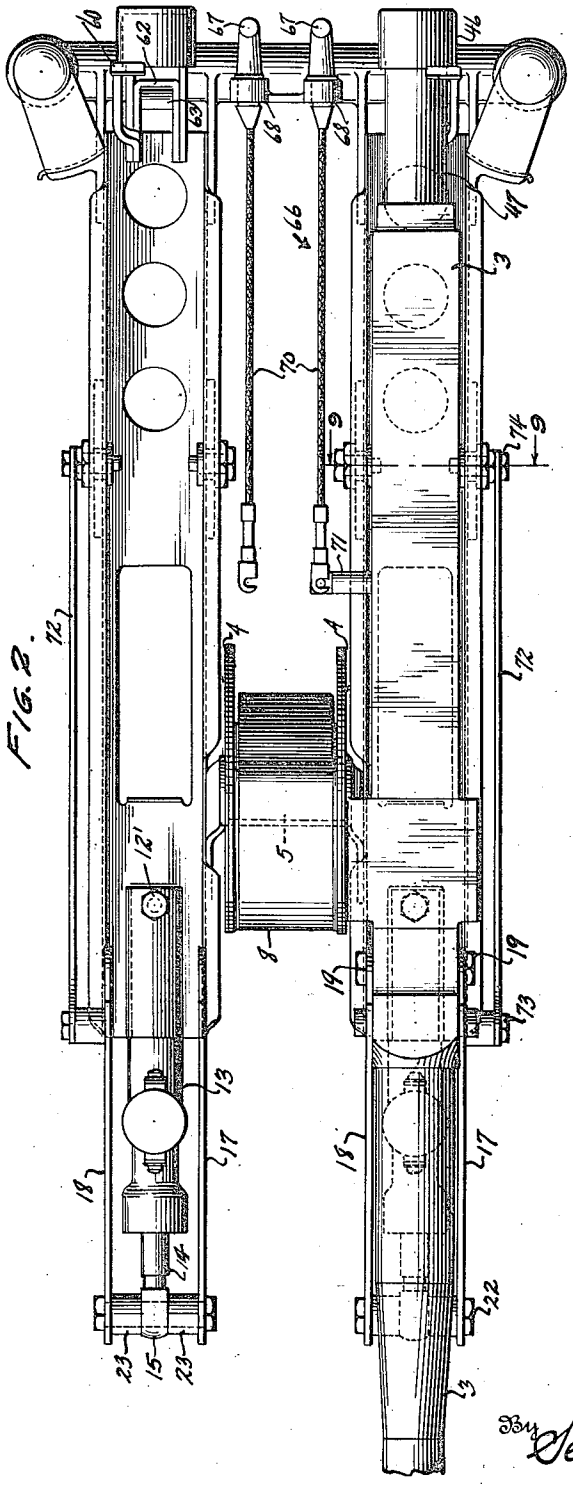


FIG. 2.

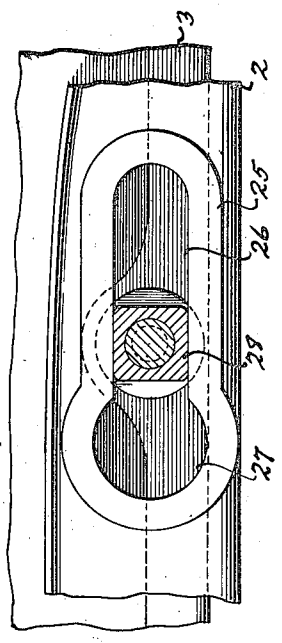


FIG. 10.

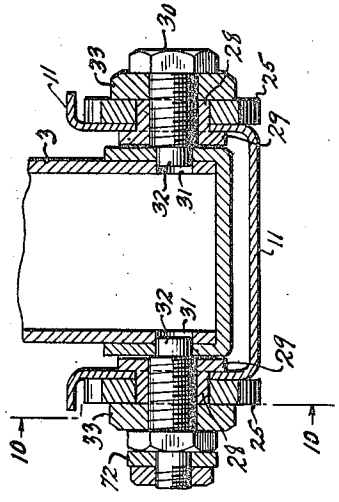


FIG. 9.

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FIG. 3.

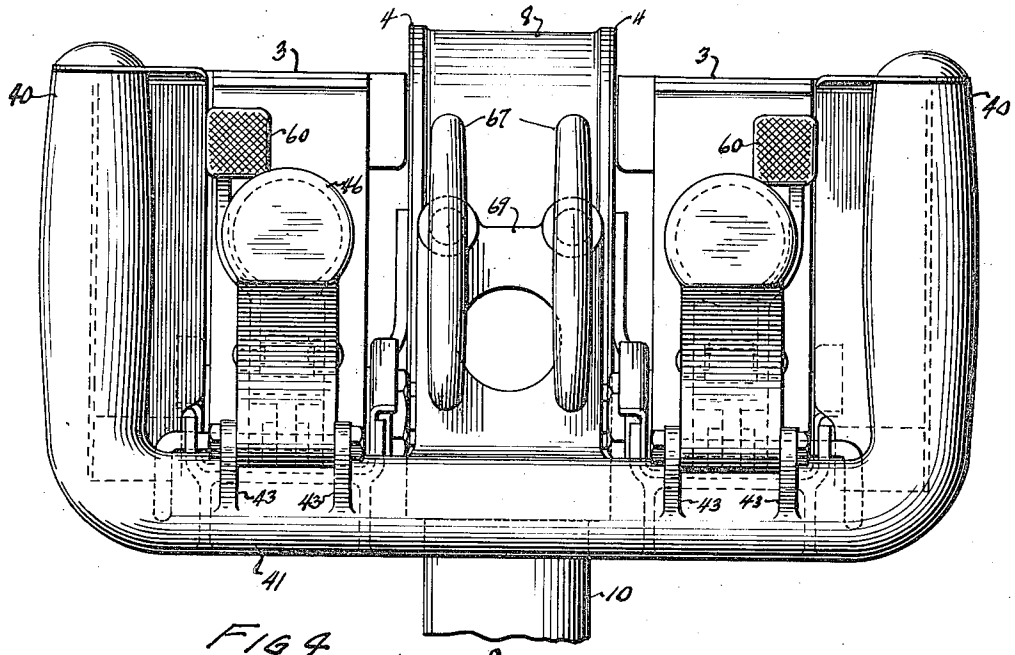
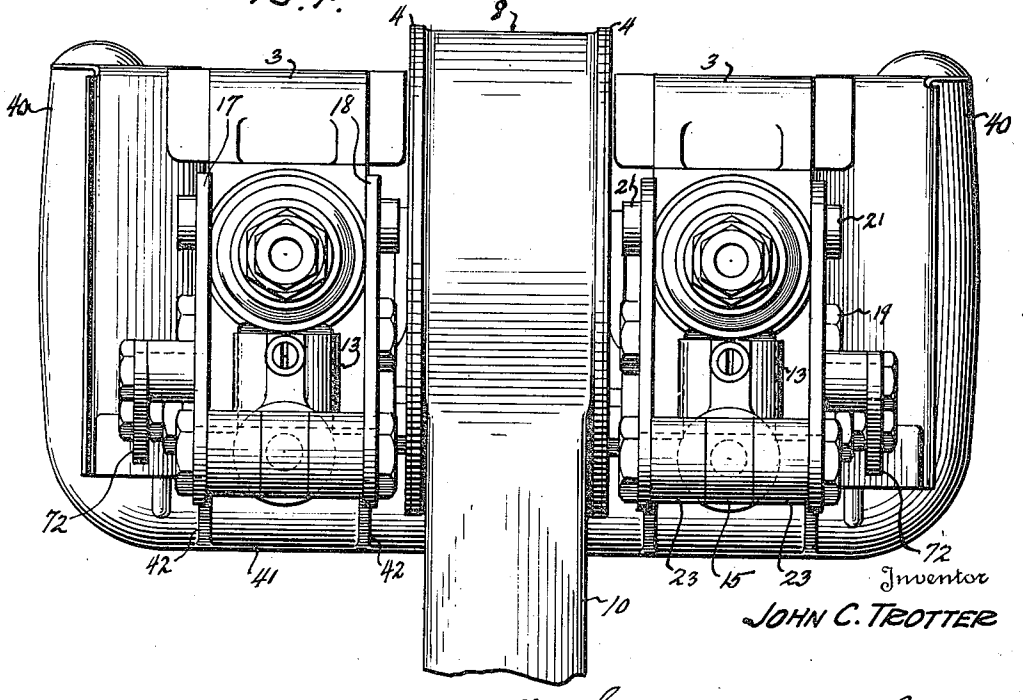



FIG. 4.




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MOUNT FOR MACHINE GUNS

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FIG. 5.

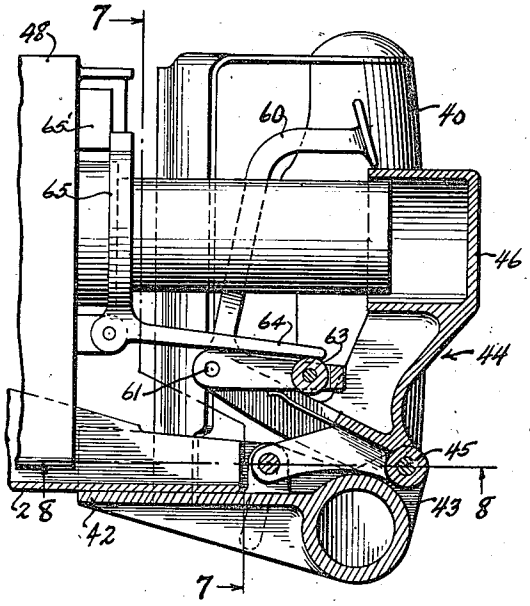



FIG. 7.

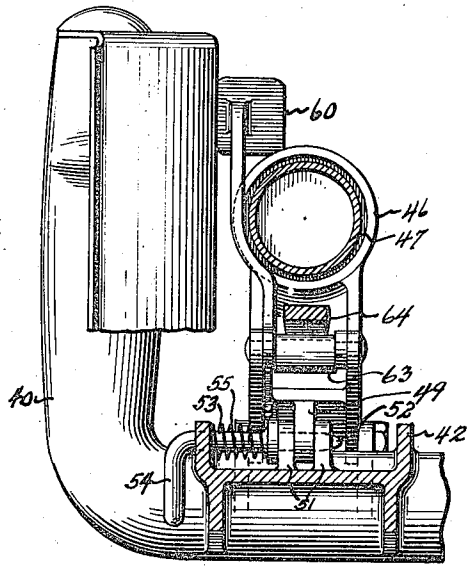



FIG. 8.

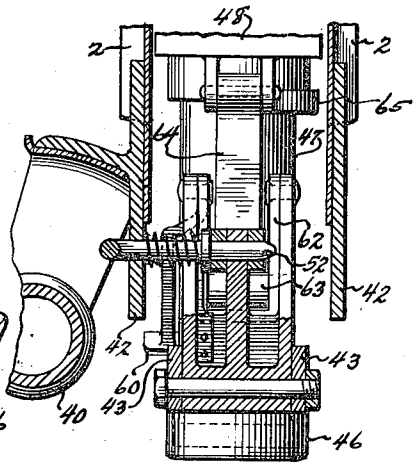
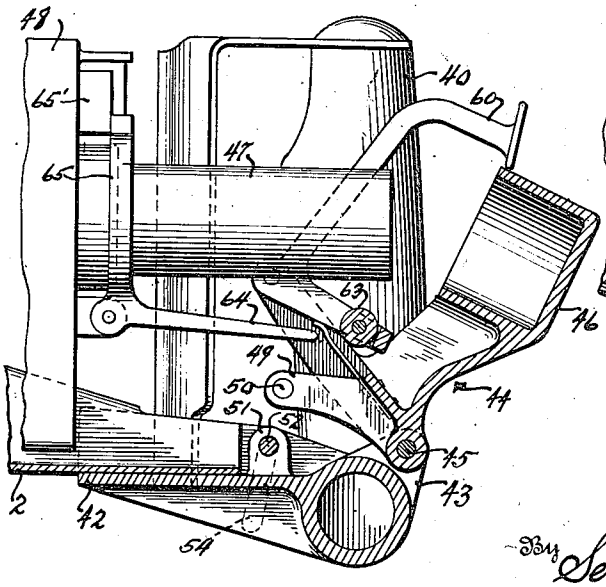



FIG. 6.




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Patented May 4, 1943 2,318,130

# UNITED STATES PATENT OFFICE

2,318,130

## MOUNT FOR MACHINE GUNS

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Application November 7, 1939, Serial No. 303,283

3 Claims. (Cl. 89—37)

My invention in general relates to mounts for machine guns and more specifically to a single mount for at least two machine guns provided with means whereby the recoil of the guns can be absorbed. In the following description, I have illustrated my inventive concept with respect to twin .30 caliber machine guns, and while the invention finds particular application with this caliber gun, it will, of course, be appreciated that the essence of the invention may be practiced with any type of machine gun.

The present application is generally similar to my copending application, Serial No. 297,356, filed September 30, 1939, for a "Frame for machine guns" which issued as Patent No. 2,279,601 dated April 14, 1942, and the application of Frank M. Salisbury, Serial No. 185,974 filed January 20, 1938, for "Adapter for mounting machine guns," but embodies additional improved features not disclosed in either of the above mentioned applications.

As pointed out in my co-pending application, it has been generally believed unnecessary to absorb the recoil of a .30 caliber gun. I determined, however, that accuracy of aim and ease of firing can be greatly improved if this recoil is compensated for and additionally it will permit the employment of a low power telescopic sight for very accurate firing.

I am, of course, well aware that devices have previously been provided for absorbing the recoil of machine guns. In general, it has been customary to use spring dampeners or hydraulic dampeners to take care of the vibration. For the most part, however, these prior recoil compensators are not particularly adapted for use in confined or cramped quarters, such as is the case of machine guns mounted in aircraft, tanks, armored cars, etc. With the recoil dampeners now in use, it has been necessary to employ a frame or mount of rather large size which will of course render the device impractical for installation in confined quarters such as those hereinabove referred to.

An object of my invention is to overcome the disadvantageous characteristics of machine gun mounts that are now in use.

A still further object of my invention is to provide a single mount for at least two machine guns which is provided with attachments for cartridge cases and having means for the disposition of the ejected cartridge links.

Yet another object of my invention is to provide a single mount for at least two machine guns with means whereby the recoil of the guns can be absorbed.

And yet another object of my invention is to provide a single mount for at least two machine guns to be used in aircraft, tanks or armored cars which will permit vertical and horizontal movement of the gun, thus affording excellent maneuverability.

And yet an additional object of my invention is to provide a single mount for at least two machine guns which comprises relatively few essential working parts and which can be easily and cheaply manufactured.

A further object of my invention is to provide a mount for machine guns which is of slightly greater size than the guns themselves.

In order to achieve the above and other objects, my invention in brief comprises a pair of light weight cradles or frames which are supported by a single member that is adapted to be mounted in a socket or the like provided in the aircraft or tank. Each cradle is formed with a slide track in which blocks that are attached to the rear portion of the gun are adapted to slide upon firing of the gun. A shock absorbing unit is associated with the forward end of the cradle and the forward section of the gun to dampen the recoil which would be transmitted to the cradle.

In addition, the mount is provided with attachments for cartridge magazines and with an arrangement whereby the ejected links may be collected. The cradle, handles, firing trigger and charging handle form part of a unitary structure.

In the drawings in which the same numerals indicate the same or similar parts:

Figure 1 is a view in side elevation illustrating my novel mount.

Figure 2 is a top plan view of the device shown in Figure 1 having one of the machine guns emitted from its cradle.

Figure 3 is a rear elevational view of the assembly shown in Figure 1.

Figure 4 is a front elevational view of the gun assembly.

Figure 5 is a fragmental elevational view of the rear portion of the right hand gun showing the associated parts of the frame in vertical longitudinal section.

Figure 6 is a view similar to Figure 5 showing the parts in the inoperative position.

Figure 7 is a sectional view taken along the line 7—7 of Figure 5.

Figure 8 is a sectional view taken along the line 8—8 of Figure 5.

Figure 9 is a fragmental sectional view taken along the line 9—9 of Figure 2 showing the manner in which the rear portion of the gun is attached to the cradle for sliding movement.

Figure 10 is a sectional view taken along the line 10—10 of Figure 9.

Referring to the drawings and more particularly to Figures 1 and 2, I have illustrated my novel machine gun mount 1 which comprises a pair of parallel longitudinally extending cradles 2, each of which is adapted to support a machine gun 3. As previously pointed out, my inventive concept is particularly applicable for use with machine guns of .30 caliber, although I do not wish to limit myself to a machine gun of any particular caliber.

It will be noted in Figure 2 that a pair of discs 4 are attached to a pin 5. Secured to each end of the pin 5 is a saddle 6. A sleeve 7 is fitted over the pin 5 and carries a drum 8 which is positioned between the discs 4 as best shown in Figure 2. The drum 8 carries at its lower end a spindle 9 which is adapted to be fitted in a socket formed in the airplane so that the mount 1 may have swiveling movement. It will be observed that the drum 8 is also formed with a chute 10 for permitting the empty cartridge links to be collected for re-use.

In Figure 9 it can be seen that each cradle 2 comprises a channel member 11 which is secured to the saddle 6 as shown at 12 in Figure 1. In view of the fact that each cradle 2 is of identical construction, I will limit my description to but one cradle. Suitably attached to the front end of the channel member 11 as shown at 12' is a hydraulic recoil dampener or shock absorbing unit 13 and its piston rod 14 is formed with an eyelet 15 at its outer end. A bracket 16 which is composed of a pair of plates 17 and 18 is attached to the forward portion of the gun casing by bolts 19. The upper rear portion of the bracket 16 is cut away as shown at 20 and this portion engages a lug 21 carried by the gun casing for providing additional support for the bracket. A bolt 22 extends through aligned apertures in the forward portion of the bracket 16 and through the eyelet 15 for attaching the piston rod 14 to the bracket. Spacers 23 are interposed on the bolt 22 between the eyelet and the plates 17 and 18.

As best shown in Figures 1, 9 and 10, the rearward portion of the cradle 2 has welded thereto a slide track 25. The track 25 is formed with an elongated slot 26 which is enlarged at its forward end as indicated by the numeral 27. A block 28 having an annular flange 29 is mounted in the slot 26 for forward and rearward movement. A bolt 30 attaches the block 28 to the rear portion of the gun casing. With particular reference to Figure 9, it will be observed that the lower portion of the gun casing is provided with apertures 31 into which a reduced portion 32 of the bolt 30 is adapted to extend. A lock nut 33 is positioned on the bolt 30 to coact with the flange 29 to prevent lateral movement of the block in the slot 26. It is believed readily apparent from the above description that when the gun is fired it is free to have a forward and rearward movement in the slot 26. In addition, by removing the single bolt 22 the gun and block 28 may be moved forwardly until the flange 29 registers with the aperture 27 when the block 28 and its associated parts are free to be removed from its attachment to the gun, and the gun can be taken out of the cradle 2.

Referring to Figures 3 and 7, it can be seen that the lower ends of operating handles 40 are connected by means of a transversely extending tube 41. Integrally formed with the tube 41 is a horizontal plate 42 which is felded or otherwise affixed to the lower portion of the cradle 2. Manifestly the handles 40 and the cradle 2 are part of a unitary structure. Ears 43 are provided on the rear upper portion of the tube 41 and a bracket 44 is pivoted to the ears by pin 45. The bracket 44 carries at its upper end a cup 46 which is adapted in its operative position (Figure 5) to receive the outer end of gun buffer extension 47 carried by back plate 48 of the gun 3.

The bracket 44 is formed with a forwardly extending member 49 which has an aperture 50. The member 49 is adapted to be positioned between lugs 51 carried by the member 42 when the bracket 44 is in its operative position. To lock the member 49 to the lugs 51, I provide a pin 52 which extends through apertures in the lugs and the aperture 50. The pin 52 has a shank 53 which terminates in a finger operated portion 54 which is located adjacent the forward portion of the handle 40. A spring 55 is positioned around the shank 53 to maintain resiliently the pin 52 in the position shown in Figure 7. To permit the bracket 44 to assume the position shown in Figure 6 (its inoperative position), the operator of the gun pulls the finger portion 54 to the left (see Figure 7) thus compressing the spring 55 and withdrawing the pin 52 from the apertures in the lugs 51 and the aperture 50 of the member 49. This will permit the bracket to be moved rearwardly about its pivot 45 thus enabling the operator of the gun to have easy access to the rear portion of the gun 3.

The firing mechanism must also be such that it may be operated without effect from the recoil of the gun. Hence a freely sliding connection is provided between the parts of the trigger assembly associated with the cradle and those associated with the gun itself. The cradle 2 is provided with a firing trigger which I have designated 60. It can be seen that the trigger 60 is pivoted at 61 to an extension of the bracket 44 and is formed with a bifurcated portion 62 having a roller 63 journaled therein. When the trigger is depressed to fire the gun it is moved about its pivot 61 thus causing the roller 63 to contact arm 64 of bell crank 65 pivoted to the back plate 48 and adapted to depress the firing mechanism 65' to fire the gun.

While I have shown the trigger for each of the guns operating independently of each other, it is, of course, obvious that the triggers may be interconnected so that the guns may be fired simultaneously.

I have also provided a charging device for the gun which device is designated by the numeral 66.

This construction comprises handles 67 normally held in sockets 68 carried by a plate 69 extending upwardly from the tube 41. Each of the handles 67 is flexibly connected by a cable 70 to the charging bolt 71 of each gun.

As shown in Figures 1 and 2, a bracket 72 is secured at its forward end to the plate 17 of the bracket 16 as shown at 73 and at its rear end to the bolt 30, as shown at 74, of the sliding block member 28. An ammunition casing is

adapted to be connected with the apertures 75 formed in the bracket 72.

It is believed readily apparent from the above description that I have provided a single mount for a pair of machine guns which is provided with means whereby the recoil of the guns can be absorbed. In addition, the mount can be moved in a horizontal plane by virtue of the swivel connection 9, and as the pin 5 can rotate in the sleeve 7 a vertical movement of the guns is afforded. In addition, the gun mount is provided with attachments for cartridge magazines and the ejected cases can be easily disposed of by means of the chute 10. The mount is of relatively simple construction and is of such size and weight that it can be readily installed in aircraft, tanks or armored cars.

While I have shown and described the preferred embodiment of my inventive concept, I wish it to be understood that I do not confine myself to the precise details herein set forth by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention, or exceeding the scope of the appended claims.

I claim:

1. A machine gun mount comprising a cradle for a gun and having side portions and a guide track in each portion, a handle for the gun secured to the rear end of the cradle, means for slidably securing and supporting the rearward portion of the gun in the guide tracks, and disconnectable means secured to the front end of the cradle for supporting the forward portion of the gun, said disconnectable means together with said first-mentioned means supporting the gun at two longitudinal sections in the cradle, said front supporting means including means providing for relative movement between the cradle and the gun upon recoil of the latter, said slidable means including slide blocks movable by sliding contact in the guide tracks upon recoil of the gun in the cradle, and said gun securing means being readily disconnectable from the cradle at the two support sections whereby the gun may be removed from the cradle.

2. A machine gun mount comprising a cradle for a gun and having side portions and a guide track in each portion in the form of a slot with an enlarged portion at one end thereof, a handle for the gun secured to the rear end of the cradle, a slide block for each slot adapted to slide therein and having a flange thereon to maintain the block in the slot, a bolt to secure each block to the rearward portion of the gun and to support the gun in the cradle, and means secured to the front end of the cradle for supporting the forward portion of the gun, said slide blocks and their bolts together with said means supporting the gun at two longitudinal sections in the cradle, said front supporting means including means to provide for relative movement between the cradle and the gun upon recoil of the latter and a removable bolt to provide removal of the gun from the cradle when the said last-named bolt is removed and the slide blocks with their respective bolts are passed through the respective enlarged portions in the slots.

3. A machine gun mount comprising a cradle for the gun and having a bottom portion and side portions and a guide track in each side portion, a handle for the gun secured to the rear end of the cradle on the bottom portion thereof, means for slidably securing the rearward portion of the gun in the guide tracks, said means including a slide block for each guide track, and means secured to the bottom portion of the front end of the cradle for supporting the forward portion of the gun, said secured means and said first-mentioned means together supporting the gun at two longitudinal sections in the cradle, said forward supporting means including means to permit relative movement between the cradle and the gun upon recoil of the latter, said slide blocks sliding in their respective guide tracks upon the recoil of the gun.

JOHN C. TROTTER.