

July 14, 1931.

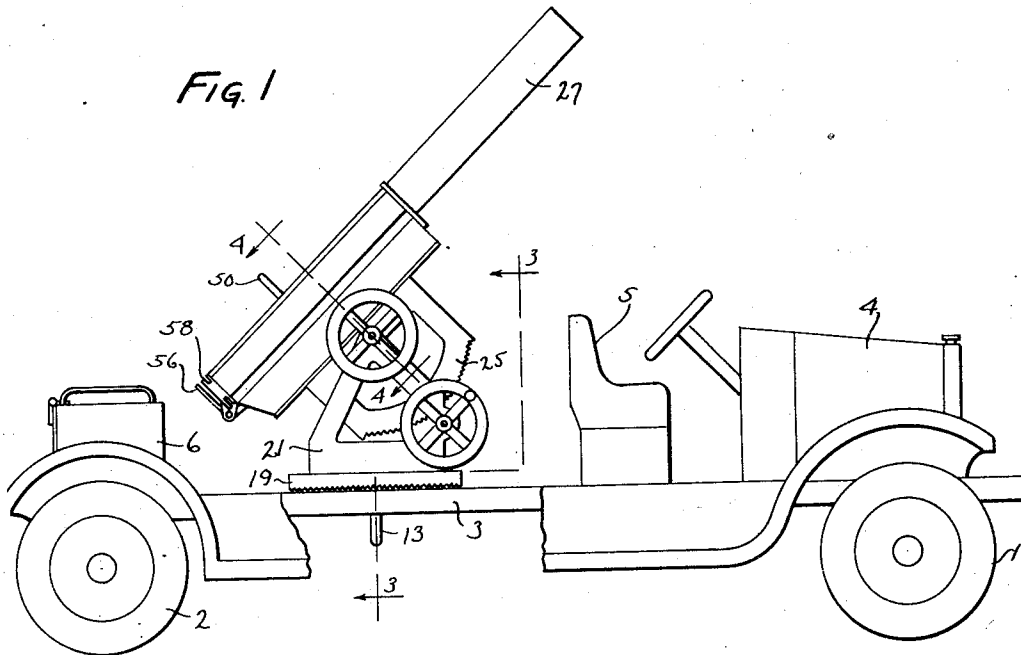
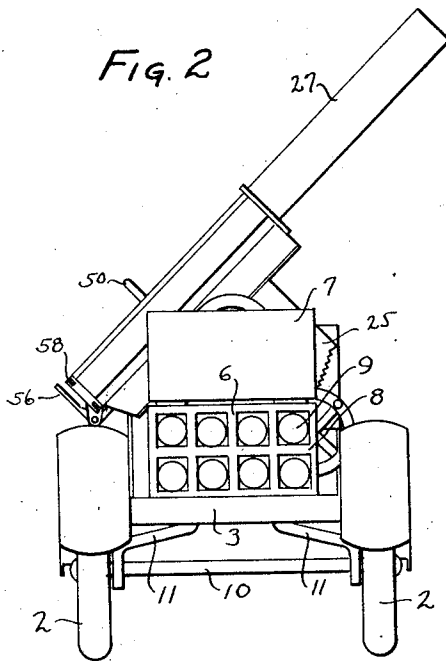
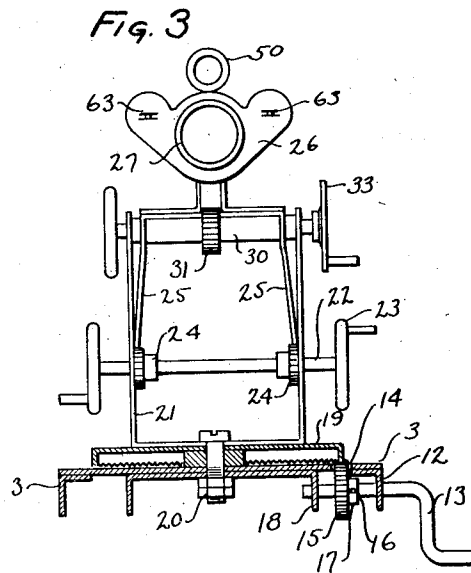
C. C. BLACKMORE

1,813,985

TOY

Filed Oct. 11, 1928

3 Sheets-Sheet 1



INVENTOR
Charles C. Blackmore
 BY *Toulmin + Toulmin*
 ATTORNEY

July 14, 1931.

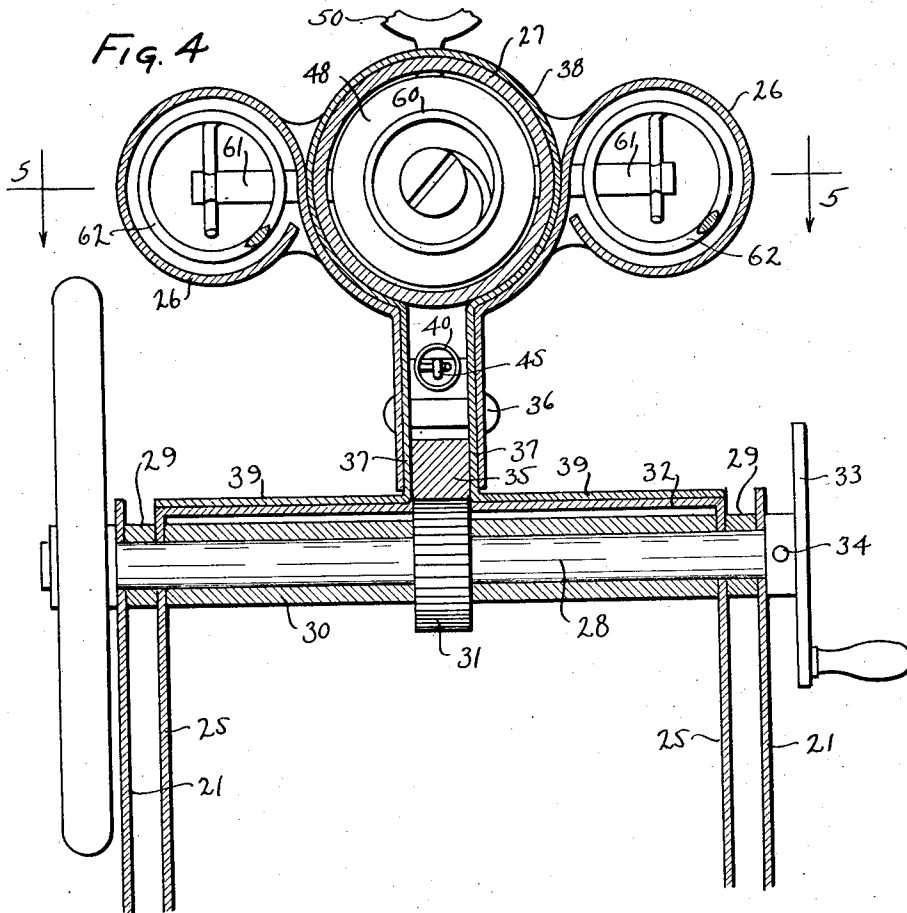
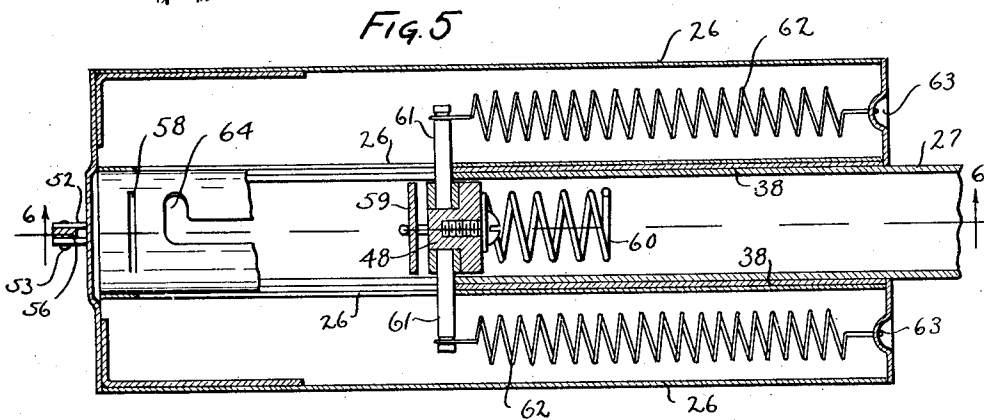
C. C. BLACKMORE

1,813,985

TOY

Filed Oct. 11, 1928

3 Sheets-Sheet 2



INVENTOR
Charles C. Blackmore
BY Toulmin + Toulmin
ATTORNEY

July 14, 1931.

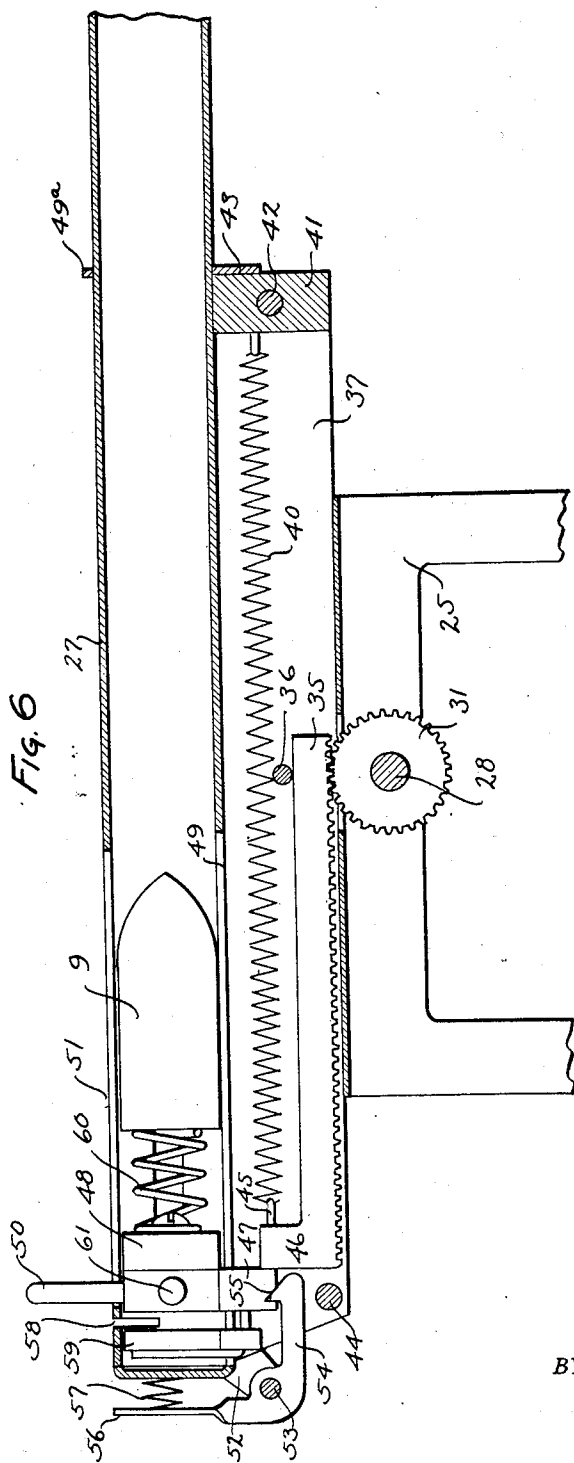
C. C. BLACKMORE.

1,813,985

TOY

Filed Oct. 11, 1928

3 Sheets-Sheet 3



INVENTOR
Charles C. Blackmore
BY Toulmin + Toulmin
ATTORNEY

UNITED STATES PATENT OFFICE

CHARLES C. BLACKMORE, OF DAYTON, OHIO

TOY

Application filed October 11, 1928. Serial No. 311,735.

My invention relates to toys and in particular to a vehicle toy built to work in combination with an anti-aircraft toy gun.

It is the object of my invention to provide the combination of a toy vehicle so arranged as to support the rotation movement of a toy gun, the angular movement of the gun to adjust its elevation, while, at the same time, provide sufficient space on the vehicle irrespective of the gun's position to permit of its operation even though it is at its maximum elevation.

It is a further object to provide means for cocking the gun which may be operated in any position of the gun.

Referring to the drawings in detail:

Figure 1 is a side elevation of the combined vehicle and gun with the running board cut away to disclose a part of the mechanism;

Figure 2 is a rear end elevation with the door of the ammunition box open;

Figure 3 is a section on the line 3—3 of Figure 1;

Figure 4 is a section on the line 4—4 of Figure 1;

Figure 5 is a section on the line 5—5 of Figure 4; and

Figure 6 is a section on the line 6—6 of Figure 5.

Referring to the drawings in detail, 1 and 2 indicate the front and rear wheels of a vehicle having a platform 3. 4 is the hood for the motor and 5 the driver's seat. This driver's seat is spaced sufficiently from the gun to permit of complete operation of the gun for loading, elevating and traversing. Likewise, the ammunition box 6 mounted on the platform 3 is sufficiently spaced from the rear end of the gun to permit of its being loaded and cocked. This ammunition box is provided with a swinging door 7 and a plurality of shell compartments 8 in which are located shells 9. The wheels 1 and 2 are mounted on axles 10 which are attached to the vehicle platform 3 by the bracket arms 11.

This vehicle platform 3 is provided with a depending ear 12 for supporting the traversing crank shaft 13 which extends laterally of the platform 3. This platform 3 is

provided with a slot 14 through which projects the traversing pinion 15 mounted on the shaft 13. This pinion is held in position by the set screw 16 in the collar 17. The other end of the shaft is supported by the bracket 18 which is mounted on the under side of the platform 3. Meshing with the pinion 15 is the traversing ring gear 19 that is mounted on the king bolt 20 so that it turns with gun supporting side frames 21. Thus the gun is pivoted for traversing movement upon the platform 3 which also carries the traversing crank 13 and the pinion 15. The vehicle body in this combination provides the triple function of support for the gun, support for the operating mechanism of the gun and acts as a support for the ammunition carrier adjacent the gun where it can be readily reached for loading while the gun is being held in cocked position.

The side frames 21 of the gun carrier has the following mechanism. The shaft 22 is pivoted in the side frames and is actuated on either side by a hand wheel 23. The shaft is provided with gears 24 near each end on the inside of the side frames, which pinion gears mesh with the segmental elevating racks 25 which support the gun and its housing. This housing for the recoil mechanism and the actuating mechanism therefor is generally designated 26, while the gun barrel or tube is designated 27.

Acting as a support for the pivotal movement of the racks 25 is the shaft 28 which is journaled in the upper corners of the triangular side frames 21. This shaft is spaced from the side frames 21 by the sleeves 29. The sleeves 30 space the gear 31 on the shaft 28 from the racks 25, such racks being connected together at their top by the member 32. Hand wheels 33 are attached by set screws 34 to the shaft 28 to actuate it. The gear 31 travels with the shaft 28 and engaging the cocking rack 35. This rack is held in operating position by a pin 36 engaging its upper surface. The cocking rack 35 reciprocates between the depending side walls 37 of a tubular clamp 38 that encircles the gun barrel 27. These depending side walls are extended laterally as at 39 where they rest

upon the platform formed by the members 32 which are the turned over upper ends of the segmental racks 25.

This cocking rack is restrained in its rearward movement by the helical spring 40 which is attached to a transverse lug 41 at the forward end of the casing formed by the side members 37. This lug is attached by the cross pin 42 against the transverse end 43. Such cross pin is inserted in the side walls 37. These side walls are held together at the rear by a cross pin 44. The rear end of the spring is connected to an eye 45 on an upstanding shoulder 46 of the cocking rack 35. This shoulder is adapted to engage with a depending lug 47 of the firing plunger 48. This lug extends through a slot 49 in the bottom of the barrel or tube 27. The end plate 43 is adapted to encircle this barrel so that a portion of it projects above the barrel as at 49a. This firing plunger is provided with an upstanding hand hole 50 which projects through the slot 51 in the top of the barrel 27.

Depending from the rear end of the gun casing and side walls 37 is a pair of ears 52 which carry between them a pin 53 that acts as the pivotal support for the bell crank firing plunger lock. Such bell crank consists of a locking finger 54 adapted to enter a notch 55 in the bottom of the lug 47 of the firing plunger 48. The other arm has a thumb piece 56 which is pressed backwardly by the spring 57 into locking position. When the spring is compressed by the forward movement of the thumb piece 56 the locking finger 54 is removed from the notch 55 so that the firing plunger 48 may move forward under the impulse of the recoil springs hereinafter explained.

In the meanwhile the cocking rack 35 will have been returned to its initial inoperative position by the spring 40 so that the recoil springs will not have to do the extra labor of moving the cocking rack 35 and its associated actuating mechanism into initial inoperative position. The slot 58 in the gun barrel may be used for the insertion of an explosive cap, if desired, which can be fired by the firing pin 59 if so used as this pin is a part of the firing plunger so that, as it moves forward, it will cause the cap to be fired which is carried in the slot 58 thus adding an additional impulse for the ejection of the shell 9. The spring 60 is also utilized to add the additional impulse behind the shell.

Turning to the recoil mechanism it will be noted that pins 61 extend laterally from the firing plunger 48. To these pins are connected the recoil springs 62 in the recoil cylinders 26. The recoil springs are connected to the forward ends of these cylinders as at 63. Thus, upon the release of the locking finger 54 or of the manually operated cocking member 50 which may be

maintained in locked position by lateral movement into the slot 64, it is possible to allow the heavy recoil spring 62 to be released to carry the shell out of the gun. The inertia of the shell 9 will tend to compress the spring 60 and, upon the stopping of the firing plunger 48, the energy stored up in the spring 60 will add an additional impulse to the shell 9. Thus, it is possible in a single toy to provide the combination of a vehicle and an anti-aircraft gun while, at the same time, secure the combination of perfect freedom of movement for the gun forming a foundation for it and its pivotal support and furnishing means of supporting the traversing mechanism while, at the same time, permitting of its being elevated to any elevation and suitably cocked and loaded while in that elevation with the ammunition box closely adjacent to the point where the gun should be loaded.

It will be understood that I desire to comprehend within my invention such modifications as may be necessary to adapt it to varying conditions and uses.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In combination in a toy of a vehicle and a vehicle platform, a traversing crank supported by said vehicle extending from one side thereof to a point beneath it, a traversing pinion carried thereby projecting upwardly through a slot in the vehicle platform, a depending ring gear having its teeth engaging with a pinion closely adjacent the surface of the platform pivotally mounted on said platform, and a gun mounted on said ring gear adapted to rotate therewith.

2. In combination in a toy of a gun barrel, a support therefor, recoil mechanism associated therewith, a firing plunger connected thereto, locking means for holding said firing plunger in locked position, and means connected with said plunger for moving it against the recoil means into locked firing position, said means comprising an actuating shaft, a gear thereon, a rack actuated by said gear having a shoulder for engaging the firing plunger to move it to firing position where it is locked, and yielding means for restoring said rack and pinion to initial inoperative position prior to firing and yielding means associated with the firing plunger for adding an additional impetus to the shell.

3. In combination in a toy of a gun barrel having a loading aperture in the top thereof for a shell, a firing plunger therein engaging said shell, recoil cylinders on either side thereof, recoil springs therein connected to said firing plunger, means to lock said firing plunger in firing position, yielding means to hold said locking means in locked position, and means movable independent of the

firing plunger for moving the firing plunger into firing position.

4. In combination in a toy of a gun barrel having a loading aperture in the top thereof for a shell, a firing plunger therein engaging said shell, recoil cylinders on either side thereof, recoil springs therein connected to said firing plunger, means to lock said firing plunger in firing position, yielding means to hold said locking means in locked position, means for moving the firing plunger into firing position, said means comprising a rack and pinion beneath said gun, said rack engaging with the firing plunger for moving it into locking position, and yielding means for restoring said rack and pinion to their initial inoperative position prior to firing.

5. In a toy gun, a barrel having a longitudinal slot on each side adjacent the breech, a recoil cylinder on each side of said barrel, a plunger in said barrel with pins thereon extending through said slots into said cylinders, a recoil spring in each cylinder attached at one end to a pin and at the other end to the front end of the cylinder, and an inertia spring in front of the plunger.

6. In a toy gun, a barrel, a plunger in the barrel, means to actuate the plunger to discharge a projectile from the barrel, and an inertia spring in front of the plunger to engage the projectile to be discharged.

In testimony whereof, I affix my signature.

CHARLES C. BLACKMORE.