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2,458,828

TOY GUN

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2 Sheets-Sheet 1

Fig. 1.

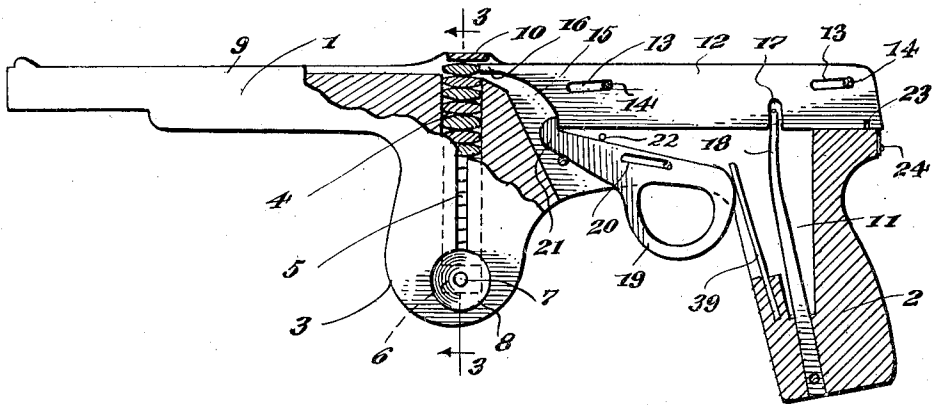


Fig. 2.

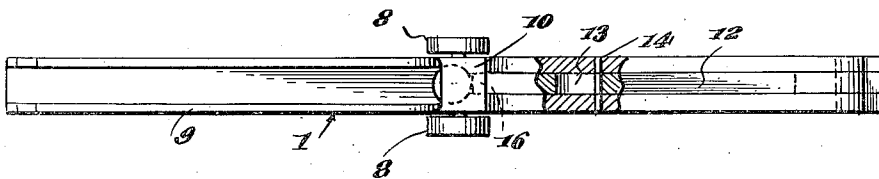


Fig. 3.

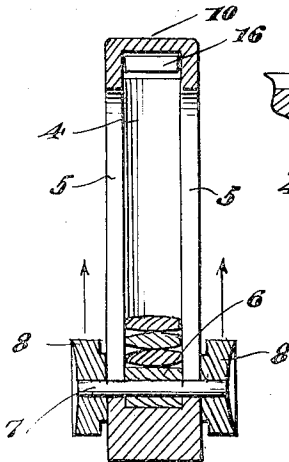
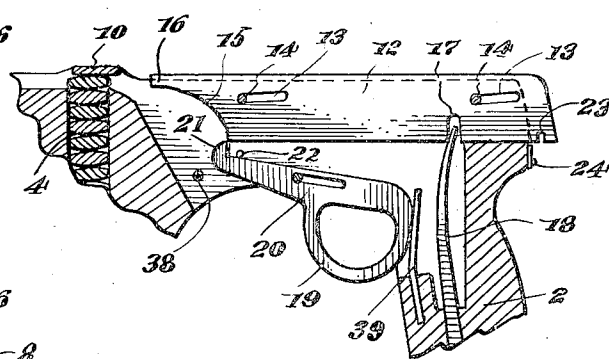


Fig. 4.



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TOY GUN

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2 Claims. (Cl. 124—27)

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This invention is directed to an improvement in toy guns of the repeater type, wherein missiles of a desired or conventional form and material may be moved to discharge position from a magazine, and successively fired or discharged by a simple single operation at will.

The primary object of the invention is the provision of a repeating toy gun, wherein a magazine is provided to receive a supply of a number of missiles of a desired form, with means to move said missiles successively to a firing position, and a firing bolt, tensioned and released under tension, in a single movement of a trigger, to be brought into contact with a positioned missile with sufficient force to discharge the missile for a considerable distance.

A further object of the invention is the provision of a firing bolt normally without tension or under pressure, and a trigger cooperating with the bolt and serving in a single movement to tension the bolt and free such bolt for free movement under the created force for firing purposes.

A further object of the invention is to provide manually operable means for selectively creating an operating driving force on the bolt while the bolt is held by a trigger against movement, the operation of the trigger releasing the bolt for movement under the created force for driving contact with the missile.

A further object of the invention is the provision of a magazine in which the missiles may be conveniently placed in superimposed relation, together with means to be selectively operated for moving the missiles upwardly in the magazine to position the uppermost missile in the path of movement of the firing bolt and subject to the driving force of the bolt for "firing" the missile.

The invention is directed to the construction of a repeater toy gun, wherein the parts are of simple construction, capable of being made of readily available materials, easily and quickly assembled or associated or taken apart, and of maximum economy.

The invention is illustrated in the accompanying drawings, in which—

Fig. 1 is a vertical sectional view, partly in elevation, showing one form of the improved repeater toy gun.

Fig. 2 is a top plan view with a part broken away.

Fig. 3 is a vertical sectional view taken substantially on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary view partly in section and partly in elevation showing certain of the parts in a second position.

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Fig. 5 is a view partly in elevation and partly in section illustrating another embodiment of the invention.

Fig. 6 is a sectional view taken substantially on the line 6—6 of Fig. 5, and:

Fig. 7 is a view partly in elevation and partly in section showing certain of the parts in a second position.

Fig. 8 is a fragmentary elevational view illustrating a further embodiment of the invention; and

Fig. 9 is a sectional view taken substantially on the line 9—9 of Fig. 8.

Referring more particularly to Fig. 1 of the drawings, the improved repeater toy gun comprises a body 1, shaped to simulate a gun, and aside from the particulars hereinafter referred to this form may be such as desired.

In advance of the finger grip 2 of the gun, the body is formed with a depending enlargement 3, longitudinally bored to form a magazine 4. The magazine is open at the upper end and closed at the lower end, and its wall is formed with diametrically-opposed slots 5, opening through the respective sides of the body. A follower block 6 is slidable in the magazine, and is provided with a transverse pin 7, leading through the opposing slots 5, and terminally provided with finger disks 8, whereby the follower may be selectively raised to move the overlying missiles upwardly in the magazine.

The barrel 9 of the gun, which may be and preferably is longitudinally grooved for guiding the missiles, terminates slightly below the open upper end of the magazine, to align that open end with the groove. Above this open end the magazine is provided with a missile limiting and position defining stop in the form of a plate 10, the construction providing that the manually-governed operation of the follower block by the finger disks will position the uppermost missile immediately beneath the plate 10 and in line with the barrel.

The rear portion of the body is hollowed out to provide a space 11 for the reception of the operating parts. Thus for instance the upper portion of this space is formed to slidably and accurately receive the firing bolt 12, here shown as a flat plate-like element of appropriate thickness. The bolt is slidably guided and limited in movement by slots 13, which receive pins 14 traversing the recess in which the bolt moves. The forward edge of the bolt is curved upwardly at 15, terminating in a reduced edge 16 to enter immediately below plate 10 to contact the uppermost missile of the

magazine. The lower edge of the bolt is notched at 17 to more or less freely receive the upper end of a leaf spring 18, the lower end of which is firmly secured in a solid portion of the body below the space 11. This spring, experience has demonstrated, may be made of properly formed particular wood, and remain effective and lasting, but it will be understood that metal, or any appropriate material available may be used.

A trigger 19 is movable in the space 11, being guided and limited by a slot and pin mounting 20. The forward end of the trigger is formed as a hooked point 21, and the trigger in position as determined by the slot and pin 20, has its upper edge inclined rearwardly and downwardly relative to the immediately overlying edge of the bolt 12. The relation of the parts is such that the hook end 21 of the trigger will lie in front of and engage the forward end of the bolt 12 when the parts are in normal position, that is when the spring 18 is not under tension.

The space 11, immediately above the inclined edge of the trigger 19, is bridged by a pin overlying such inclined edge, and serving when the trigger is moved rearwardly, in the firing action, to cause the hook end 21 of the trigger to gradually move downward and release the bolt. The trigger extends outwardly below the body of the gun to permit it to be conveniently manipulated, and when the trigger is so operated, it serves to gradually move the firing bolt rearwardly, obviously tensioning the spring 18. When the trigger has been moved sufficiently to cause the pin 22 to force the hook end out of holding relation to the bolt, the spring is under considerable tension, which is exerted on the bolt as the latter is released by the trigger. Assuming that a missile has been placed in the firing position described by manual movement of the follower, the forward edge 16 of the bolt will eject the positioned missile with a force determined by the action of the spring.

The bolt 12 is formed in its lower edge near its rear end with a notch 23, adapted to receive, when the bolt has been moved sufficiently rearward by movement of the trigger, a finger 24 to hold the bolt withdrawn, while the magazine may be recharged by introducing the missiles through the opening at the upper end of the magazine. Of course, the rearward movement of the bolt by the trigger for reloading purposes is insufficient to release the bolt from the trigger.

In Fig. 5 there is shown a slightly different form for tensioning the firing bolt and of the trigger form and operation. Here, the magazine is of the form previously described and the firing bolt, indicated at 25, is substantially of the form described, being guided on pin-and-slot mountings 26. The lower edge of the bolt is formed with a spring receiving recess 27, having a narrow entrance and enlarged beyond the entrance to prevent binding of the spring to be described.

The spring 28 is of the form previously described having its lower end fixed at 29 and its upper end seated in the recess 27. The trigger 30 is of more or less conventional form or angle shape pivotally supported in the space 11 on a pivot pin 31. The forward end of the upper arm of the trigger has a hook-end 32 to engage the forward end of the firing bolt as in the form previously described, and the end of the lower arm of the trigger projects beyond the gun body for convenient trigger operation. A spring 33 underlies the upper arm of the trigger to normally

maintain the hook end in position to engage the firing bolt.

A tensioning element 34, in the form of a plate pivoted at its lower end, as at 35 in the space 11, is arranged to selectively tension the spring 28 for creating the driving force on the firing bolt. The rear edge of this tensioning element 34 projects beyond the rear surface of the finger grip of the gun body, so that pressure may be applied thereto by the palm of the hand finger-gripping the trigger. The forward edge of the element 34 has a rounded projection 37 to bear directly on the spring 28.

In this form the firing bolt, restrained against forward movement by the trigger, is normally free of any spring force as the spring is not under tension. In grasping the gun for use, the tensioning element 34 is pressed inwardly thus deflecting the intermediate portion of the spring and creating a light force on the bolt. As the trigger is tripped the bolt is released and the firing operation occurs as previously described.

If desired the space may be closed to cover the operating parts, except where exposure is required for operation. Of course, the firing opening at the top of the magazine must remain open for firing purposes, and also to recharge the magazine.

The parts of the improved repeater gun may be made in any required sizes and of any appropriate or available material. However, in the above described forms, the parts may acceptably and serviceably be made largely of material available under present restricted conditions, such for example as small parts of wood, or cast or formed of plastic, or other like material. In this connection it will be understood that practically any variety of missile may be used, with such constructed of any appropriate material, and that the magazine will, of course, have a sectional shape and size to accommodate the selected type of missile.

The trigger 19 of the form shown in Fig. 1 may be controlled in any particular manner, but if the loop finger form is used as shown, the trigger is held against undue downward movement at its forward or hook end by a pin 38, and a spring 39 may be provided to bias the trigger in the extreme forward position by the slot and pin mounting 20. These details provide for a working structure in which the trigger first tensions the bolt and then releases it for movement under such tension; while in the form shown in Fig. 5 the bolt is tensioned for movement wholly regardless of the trigger, which in this instance simply acts as a restraining agent until tripped to release the bolt.

In the embodiment of the invention illustrated in Figs. 8 and 9 is shown a form of the invention wherein the missiles 40 are automatically fed through the instrumentality of a retractile member 41, herein disclosed as constituting a rubber band. This band has its central portion 42 received within a suitably positioned groove 43 in the outer surface of the top plate 44 of the magazine 45 and disposed transversely thereacross. The retractile member or rubber band 41, as clearly shown in Figs. 8 and 9, has each extremity engaged with an extended end portion of the transverse pin 46 associated with the follower block 47.

Having thus described the invention, what is claimed as new is:

1. A toy gun comprising a gun form simulating body including a barrel formed to provide a pro-

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jectile guide and a hand grip, a relatively long firing bolt slidably supported for movement transversely of the grip and longitudinally of the barrel for contact at its forward end with a projectile in firing position in the rear end of the guide, a trigger shiftably mounted in the body and including a hook engageable with the bolt, a spring mounted in the body and engaged with the bolt, and means separate from and mounted for movement independently of the trigger and actuated by the hand grasping the hand grip for placing the spring under tension while the trigger hook retains restraining connection with the bolt whereby the bolt will be projected forwardly when the trigger is shifted to free the hook from the bolt.

2. A toy gun comprising a gun form simulating body including a barrel formed to provide a projectile guide and a hand grip, the upper part of the hand grip having a chamber therein into which the rear end of the guide opens, a relatively long firing bolt slidably supported in the upper part of the chamber for movement on a line paralleling the guide and having a forward end portion adapted to enter the rear end of the guide for contact with a projectile in firing position in such rear end, a trigger having a hook portion pivotally supported in the forward part of the chamber and adapted for detachable connection with the firing bolt when the bolt is in retracted position, a leaf spring secured at one end in the lower part of the chamber and extending upwardly and having its other end loosely connected with the bolt, a member pivotally supported in

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the chamber adjacent to and upon the side of the leaf spring opposite from the trigger, said pivoted member having a portion extending outside the chamber beyond the rear side of the hand grip and having an opposite side portion engaging the leaf spring when the leaf spring is untensioned, the said pivoted member being adapted to be forced into the chamber against and to place the spring under tension by a hand grasping the hand grip, the said hook portion of the trigger maintaining the bolt against movement under the action of the tensioned spring prior to the actuation of the trigger.

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