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TOY GUN WITH SPRING ACTUATED PROJECTILE PROPELLING MEANS

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FIG. 1

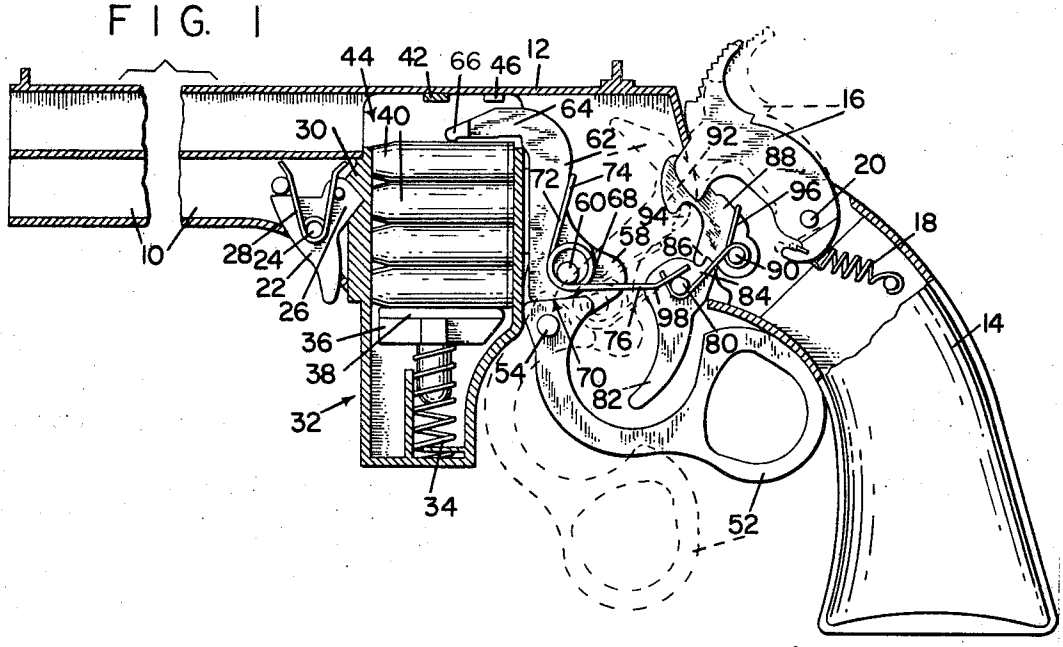


FIG. 2

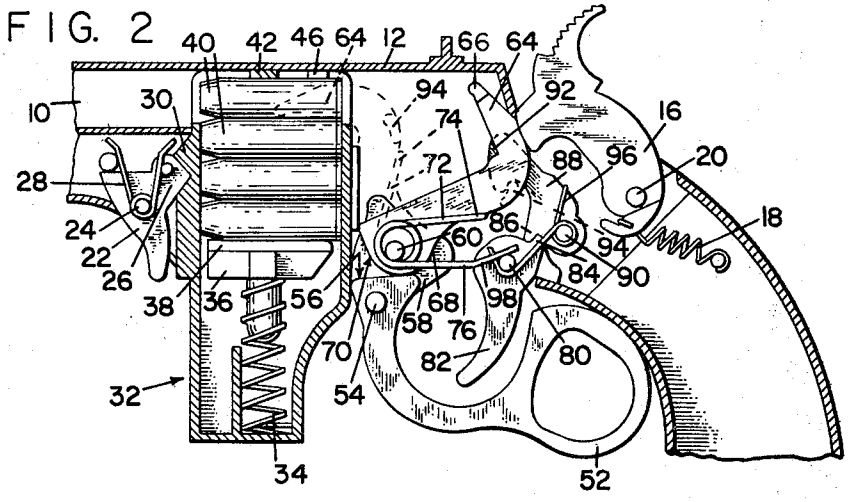
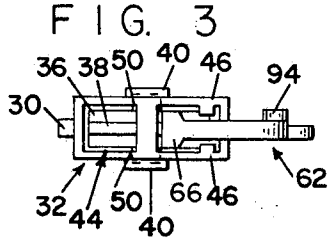


FIG. 3



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ABSTRACT OF THE DISCLOSURE

A toy firearm which has a barrel through which toy projectiles are ejected by means of a hammer which strikes them, there being a trigger hammer and sear which are arranged generally in a manner similar to an actual firearm, the usual cocking piece which normally forms a part of the hammer however being disconnected therefrom and being merely for looks and to make a noise. The hammer is cocked by the sear, the mechanism for the gun including a lever for this action. There is a magazine which feeds the toy bullets or cartridges to the barrel, the magazine being detachable and being capable of having cartridges inserted into it to the purpose that the hammer strikes a single cartridge aligned with the barrel and ejects the same, and when the hammer overlies the next cartridge preventing it from lifting into the barrel until such time as the hammer is cocked.

This invention relates to a toy firearm of the type having a lever action which serves to cock a hammer through the use of a sear, the hammer having a spring normally urging it forward to firing position. When the hammer is so released and moves forwardly it strikes the rear end of a simulated cartridge arranged in the top or projection area of a magazine and by striking the cartridge a sharp blow causes it to be propelled through the barrel of the firearm, as at a target.

Further objects of the invention include the provision of a toy firearm as above described in which the cartridge-propelling hammer is completely concealed, the firearm having a dummy hammer also which is actuated to a simulated cocked position by the retraction of the propelling hammer under influence of the lever as it is pivoted forwards or down, the lever tending to return to normal position under influence of the propelling hammer spring.

A still further object of the invention resides in the provision of a magazine for a series of simulated cartridges to be propelled one after the other as they rise in the magazine due to the action of the magazine spring, the propelling hammer striking the rear end of the topmost cartridge when the trigger is pressed, and at the same time overlying the next succeeding cartridge in the magazine and holding it in position until such time as the toy firearm is once more cocked. The propelling hammer then releases the cartridge and it rises to the firing position in line with the barrel ready to be projected; in this way the cartridges are prevented from accidentally falling by gravity through the barrel.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which:

FIG. 1 is a view with a part of the toy firearm broken away to show the parts thereof, parts being in section;

FIG. 2 is a similar view but with parts removed for clarity of illustration, and

FIG. 3 is a top plan view of the magazine showing the relation of the propelling hammer with respect thereto in just fired condition.

In illustrating the present invention it has been shown

in the form of a pistol but of course it can be in the form of a shoulder arm or other kind of toy firearm if this should be desired. The toy has a barrel **10** which may be of any construction but is open from end to end for the projection of the cartridges therethrough. A receiver or frame construction is indicated at **12** and this receiver or frame is enclosed and includes grips **14** which form no particular part of the present invention. There is a visible hammer **16** which under influence of a hammer spring **18** tends to turn in a counterclockwise direction as seen in FIG. 1, the spring **18** being connected to this hammer to one side of the hammer pivot pin **20**. This visible hammer is a dummy.

Located on the frame under the barrel there is a pivoted magazine catch generally indicated at **22**, this being mounted on a pin **24** and having a nose **26**. A spring of any convenient description **28** causes this magazine catch to turn in a clockwise direction and it is held in a position where it can be pressed in a counterclockwise manner against the action of spring **28** to release a catch **30** on a magazine generally indicated at **32**.

This magazine is substantially enclosed and has a magazine spring **34** and a cartridge follower **36**. The cartridge follower **36** has a longitudinal rib **38** on the top surface thereof to reduce friction between the cartridges **40** and the follower. At the top of the magazine there is a stop which extends across it at **42** generally centrally thereof and this holds the cartridges in position, but at the same time allows them to be loaded into the magazine through an aperture at **44**. Several cartridges can be loaded as indicated FIG. 1 gradually compressing the spring **34** in a manner imitative of a well known firearm magazine.

Toward the rear portion of the magazine **32** there are a pair of inturned ears at **46, 46** which also aid in holding the cartridge in position, these ears being spaced for a purpose to be described. The magazine is provided with outwardly extending longitudinal guides **48, 48** and these are adapted to slide in corresponding ways in the receiver so that the magazine is held in substantially rigid condition when it is latched as shown in FIG. 1. Also if desired the follower **36** may have a pair of lateral guides **50, 50** which are slidingly received in longitudinal inner recesses in the magazine guides **48, 48** so that the cartridges will be held without cocking in the magazine and will be fed smoothly upwardly as the action of the gun requires.

It will be seen that this magazine is quickly and easily loaded with lightweight toy plastic cartridges as may be desired and they will be fed smoothly upwardly each time that the gun is fired in order to be projected through the barrel **10** to the left in FIG. 1.

The receiver or frame of the present toy is provided with a cocking lever **52** which can be moved between the solid and dotted line positions shown in FIG. 1. This lever is mounted to pivot on a lever pivot pin **54** and is provided with a flat laterally extending shelf **56** above pin **54**, leaving a reduced portion **58** to one side of the center of the lever.

Pivotally mounted on a pin **60** fixed to the lever in portion **58** there is a propelling hammer generally indicated at **62**. This member has an elongated forwardly extending nose portion **64** which is widened at the very tip at **66**, see particularly FIG. 3. The pivot pin **60** is spaced from that at **54** and in this area the hammer has an arcuate surface at **68** and a flat surface **70**, see particularly FIG. 2. It will be seen therefore that when the lever **52** is moved from the solid line to the dotted line position of FIG. 1 the propelling hammer **62** must move with it as though the parts were fixed together to the dotted line position in FIG. 1. Then however the lever **52** is brought back to the solid line position in FIGS. 1 and 2 due to the

arcuate surface at 68 which is enabled to allow the propelling hammer 62 to break with respect to the lever 52 in the counterclockwise direction of motion of the lever 52.

A wire spring 72 is conveniently mounted on the pin 60 and has an arm which extends upwardly in FIG. 1 embracing the rear edge portion of the propelling hammer as is indicated at 74 to continually urge it in a counterclockwise direction, and it has another arm 76 which bears on the trigger pin 80. The effect of this construction is that the spring arms approach each other, see FIG. 2, and when the propelling hammer 62 is latched as will be described, it is under spring tension. At the same time this spring tends to move the lever from the dotted line to the full line position in FIG. 1 without any further springs being necessary for this purpose, because the pin 60 moves downwardly to the right under influence of the lever, and the spring tends to hold pin 60 and hence the lever to the left.

The trigger is indicated at 82 and it has a nose 84 engaging a complementary nose 86 of a sear 88 on a sear pin 90. The sear has a cocking nose 92 which engages a lug 94 on the projecting hammer 64 to hold the latter in cocked position as shown in dotted lines in FIG. 1 and solid lines in FIG. 2. A spring 96 engages an upper surface of the sear 88 and has another portion at 98 that underlies the trigger pin 80. This spring causes the trigger and the sear to be constantly disengaged, but under trigger pressure the sear is moved in a counterclockwise direction to release the sear nose 92 from the hammer lug 94, thereby allowing spring 72 to cause the hammer to move in the counterclockwise direction to strike the cartridge to be propelled.

As the propelling hammer 62 moves in a clockwise direction to its cocking position under influence of the lever 52, it engages the nose of the false hammer 16 and causes it to be retracted in a counterclockwise direction and to be held in this position. When the propelling hammer 62 is then released, the hammer 16 moves downwardly as though it were actually causing the gun to fire.

The imitation hammer 16 and the propelling hammer 62 are more or less generally in the same plane but the sear 88 is slightly offset, it being noted that lug 94 is offset from the plane of the propelling hammer so that these parts will interact as stated.

It will be seen therefore that as fast as the lever can be worked, a new cartridge will spring into propelling position and as soon as the trigger is pressed, the cartridge will be projected forwardly. The action of this gun is extremely rapid but nevertheless requires the lever to be actuated between each shot. The magazine is quickly and easily removable by depressing latch 22 and is quickly and easily reloaded more or less in the manner of a virtual firearm.

The widened nose at 66 of the projecting hammer 62 ensures that it will always overlay the next cartridge without jamming between the cartridge and the magazine wall, and the ears at 46 allow the projecting hammer nose to extend between them in order to carry out the functions noted, but at no time does the nose 66 ever extend as far forwardly as the stop 42 in the magazine.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A top firearm comprising a barrel and a frame connected thereto, mechanism in the frame for propelling a simulated cartridge through the barrel, said mechanism including a cartridge propelling hammer, a pivot for the hammer, said hammer having two general positions, one in which it is retracted from cartridge-propelling position and cocked, and the other in which it is located in cartridge striking and propelling position, a spring for moving the propelling hammer from cocked to cartridge striking and propelling position, a pivoted sear, a nose on the sear temporarily engaging the propelling hammer holding it in cocked position, a spring tending to hold the sear in hammer cocked position, a trigger, a trigger pin, interengaging means between the trigger and the sear whereby the trigger upon being pressed moves the sear to hammer releasing position, and a lever, means pivotally mounting said lever, means pivotally mounting said cartridge propelling hammer on said lever, means biasing said hammer into engagement with said lever, hammer and lever surfaces abutting each other, said surfaces being in continuous abutting relationship as the lever is moved in one direction to carry the hammer with it to the cocked position thereof adjacent the sear, abutting surfaces being separated in response to the return motion to normal position so that the hammer stays in cocked position regardless of the position of the lever until the sear releases the hammer.

2. The toy firearm of claim 1 wherein the abutting surfaces between the lever and the cartridge-propelling hammer comprises a pair of contacting generally flat surfaces, one surface being on the lever and the other on the hammer, and there being a curved surface on the hammer in contact with the flat surface on the lever providing for relative motion between the lever and the hammer.

3. The toy firearm of claim 1 wherein the abutting surfaces between the lever and the cartridge-propelling hammer comprises a pair of contacting generally flat surfaces, one surface being on the lever and the other on the hammer, and there being a curved surface on the hammer in contact with the flat surface on the lever providing for relative motion between the lever and the hammer, said surfaces being located between the pivot for the lever and the pivot for the hammer.

4. The toy firearm of claim 1 including a dummy hammer in an exposed position, means pivotally mounting said dummy hammer, a spring to urge the dummy hammer in one direction, said dummy hammer being engaged and moved against the last named spring in the opposite direction by contact with the cartridge propelling hammer as the latter is moved to its cocked position.

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