March 13, 1951 M. JENKINS 2,545,358

TOY SPRING PISTOL

Filed July 1, 1946

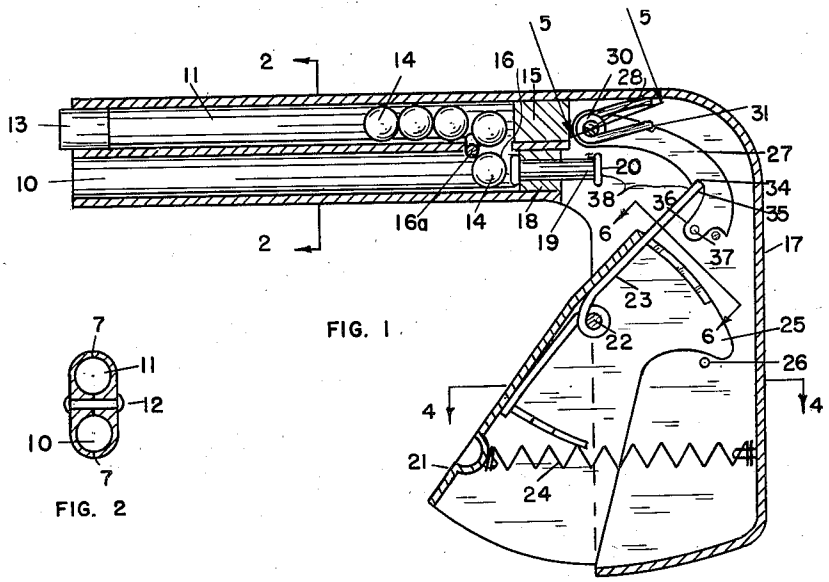


FIG. 2

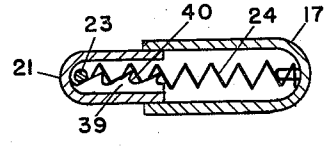


FIG. 4

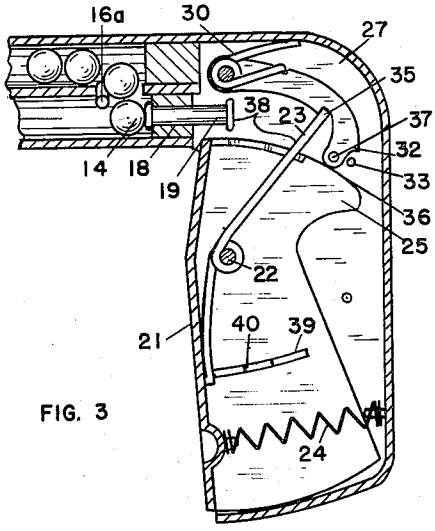


FIG. 3

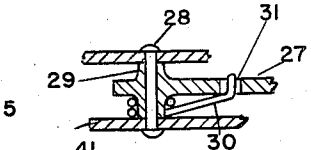


FIG. 5

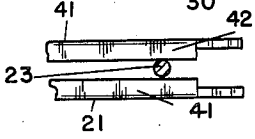


FIG. 6

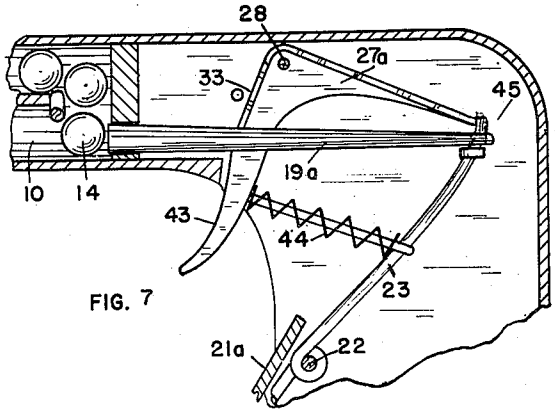


FIG. 7

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TOY SPRING PISTOL

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2 Claims. (Cl. 124—27)

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This invention relates to improvements in toy pistols and has reference to a spring operated pistol for shooting small pellets, such as marbles, peas or shot of different kinds.

It is the object of this invention to produce a toy pistol intended more particularly for shooting marbles, but which can, of course, be employed for shooting other projectiles.

Another object of this invention is to produce a magazine pistol in which a number of marbles or other pellets can be loaded into a magazine and each expelled separately and in quick succession.

A further object of the invention is to produce a pistol of the so-called "double action" type in which the operator, by compressing a lever or trigger, first cocks the hammer and then, on a further movement, releases it and discharges the projectile.

Another object of this invention is to produce a toy pistol of the kind mentioned that can be cast from plastic material or hard rubber, metal or any other suitable material and which will also be of such a design that the parts can be formed by dies.

The above and other objects that may become apparent as this description proceeds are attained by means of a construction and an arrangement of parts that will now be described in detail and for this purpose reference will be had to the accompanying drawing in which the invention has been illustrated in its preferred form, and in which:

Figure 1 is a longitudinal section through the pistol showing the elements in their normal relation;

Figure 2 is a section taken on line 2—2, Figure 1;

Figure 3 is a fragmentary section similar to that shown in Figure 1, and shows the parts in the position they assume at the moment the hammer is released;

Figure 4 is a section taken on line 4—4, Figure 1;

Figure 5 is a section taken on line 5—5, Figure 1;

Figure 6 is a section taken on line 6—6, Figure 1; and

Figure 7 is a modification thereof.

In the drawing reference numerals 10 and 11 represent the barrel and the magazine of the pistol, respectively. The barrel and magazine may be molded so as to form a unitary assembly or may be made in two parts secured together by a number of rivets like those designated by reference numeral 12 in Figure 2. The outer end of the magazine is usually closed by means of a cork or other plug 13, and contains a number of marbles or other projectiles like those designated by reference numeral 14. The inner end of the magazine is closed by means of a plug 15. The partition between the magazine and the barrel is cut away, leaving an opening 16 through which the projectiles may pass from the magazine to the barrel. A small rod or a spring like that designated by reference numeral 16a is positioned in a transversely elongated opening and serves to prevent the accidental displacement of the projectile in the barrel.

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Extending laterally from the inner ends of the barrel and magazine is a handle portion that has been designated by reference numeral 17. A tubular plug 18 is positioned in the inner end of the barrel.

Slidably mounted in the opening in the plug is a plunger 19 provided at the ends with heads like those designated by reference numeral 20. Plunger 19 is freely slidable in the plug 18 and is preferably made from wood or some other light material so as to have a small inertia. The handle is of elongated U-shaped cross section, as shown in Figure 4. A lever which will be hereinafter referred to as the trigger and which has been designated by reference numeral 21 is mounted for rocking movement about pivot 22. A spring 23 is coiled about pivot 22 which normally rests against the inner surface of the curved side thereof. A spring 24 serves to hold the trigger in the position shown in Figure 1 with the projection 25 resting against stop 26. A sear 27 is pivoted at 28 and is provided with a hub 29 to which it is connected by solder or by welding so as to give some rigidity to the pivotal connection. A spring 30 encloses the pivot and has one end resting against the top of the handle and the other positioned in the notch 31. This spring is tensioned so as to normally hold the sear in the position shown in Figure 1 in which the projection 32 rests against stop 33. When the parts are in normal position, spring 24 urges the trigger clockwise about its pivot, bringing the upper end of spring 23 into the position shown in Figure 1, where it extends into the notch 34. The end of the spring 23 is preferably provided with a cross member 35 so as to form a T. The sear is provided with a downwardly extending projection 36 that has a pin 37.

Let us now assume that the parts are in the position shown in Figure 1 and that pressure is applied to the trigger 21 sufficient to compress

spring 24 and bend spring 23. The upper end of spring 23 will engage the wall of the notch 34 and hold the spring from movement. The trigger will continue to move until it assumes the position substantially like that shown in Figure 3 when the upper end of the projection 25 will engage pin 37 and move the sear upwardly until it releases spring 23. The latter being now free to move in response to the strains to which it is subjected will snap forwardly hitting the rear end of plunger 19 and this, in turn, will transmit the impact to marble 14 that is positioned against the front end of the plunger. The marble or projectile 14 will then be given a high velocity and emerge from the barrel at high speed.

As soon as pressure is released on the trigger, spring 24 brings the parts back into normal position, which position is shown in Figure 1. A projectile from the magazine now drops down into the barrel and is held against accidental displacement by 16a. This operation can be continued until all of the projectiles have been used, after which the magazine must be reloaded. After each shot, it is preferable to turn the pistol so that the muzzle points upwardly as this facilitates the rearward movement of plunger 19. The latter may, however, be connected with the spring 23 by means of a silk thread or some suitable tension member like that indicated by reference numeral 38, although such an interconnection is not necessary.

The pistol can be used by boys shooting marbles as it permits the marble to be aimed and shot with great precision. It may also be used for shooting peas or BB shot or any other projectiles.

The pistol is preferably made in two parts divided along line 7—7, in Figure 2, in which case it is held together by a number of rivets or screws.

Means has been provided for increasing the tension of spring 23 so as to compensate for progressive weakness due to age and use and also to increase the force of the shot. To effect this adjustment a plate 39 is applied to one side of the trigger as shown in Figure 4. This plate is provided with a plurality of teeth or notches 40 into which the spring 23 may be moved. By moving the spring towards the right when viewed as in Figure 3, the tension will be increased. The upper end of the trigger is also provided with inwardly extending flanges 41 that form a slot 42 in which the spring 23 moves which guides the spring in its movement towards the end of the plunger.

In Figure 7 a slightly modified form of construction has been shown in which the part 21a is used merely for tensioning the spring 23, and instead of sear 27 shown in Figures 1 and 3, a sear 21a is used which is in the shape of a bell crank and terminates in a downwardly extending trigger 43. A spring 44 is positioned between trigger 43 and spring 23 and takes the place of spring 24 in Figures 1 and 3. Instead of using the plunger 19, an elongated plunger 19a is employed which is connected with spring 23 at 45. The end of sear 27a serves as a stop for the spring 23 and holds it from movement while it is being put under tension and after it has been tensioned by moving 21a into the position shown in Figure 3, the trigger 43 is pulled rearwardly, whereupon plunger 19a is projected towards the left, striking the marble 14 and expelling the same through the barrel. The modification shown in Figure 7 contains some more parts than the other and increases the size due to the use of plunger 19a which must have a considerable length in order to get as nearly as possible a straight line motion.

Having described the invention what is claimed as new is:

1. In a toy pistol or the like of the type having a barrel and a tubular magazine in axial parallel relation, a handle extending downwardly from the breech end of the barrel, the breech end of the magazine being closed to the rearward movement of projectiles, the wall separating the magazine and the barrel having an opening communicating the rear ends thereof and through which projectiles may pass from the former to the latter, means for releasably retaining a projectile in the rear end of the barrel, the improvement for use with the above recited elements of means for applying to a projectile a propelling force, comprising; a sear pivoted to the handle at a point above the upper limit of the barrel, the sear extending rearwardly, spring means urging the rear end of the sear downwardly, means limiting the downward movement of the sear, a trigger pivoted to the handle at a point below the barrel, a hammer spring having its lower end connected with the trigger and its upper end projecting above the trigger into the path of the sear, the latter having a stop surface for engaging the upper end of the hammer spring to limit its forward movement, spring means interposed between the trigger and the handle for urging the portion of the trigger below its pivot forwardly, whereby the upper end of the hammer spring will normally be positioned to the rear of the stop surface, whereby a rearward movement of the lower end of the trigger will bend the hammer spring, a plunger positioned in the path of the hammer spring, between said spring and the barrel, and means comprising a portion of the trigger for moving the sear to inoperative position to release the hammer spring, after the latter has been put under strain.

2. In a toy pistol or the like of the type having a barrel and a tubular magazine in axial parallel relation, a handle extending downwardly from the breech end of the barrel, the breech end of the magazine being closed to the rearward movement of projectiles, the wall separating the magazine and the barrel having an opening communicating the rear ends thereof and through which projectiles may pass from the former to the latter, means for releasably retaining a projectile in the rear end of the barrel, the improvement for use with the above recited elements of means for applying to a projectile a propelling force, comprising; a sear pivoted to the handle at a point above the upper limit of the barrel, the sear extending rearwardly, spring means urging the rear end of the sear downwardly, means limiting the downward movement of the sear, a trigger pivoted to the handle at a point below the barrel, a hammer spring having its lower end connected with the trigger and its upper end projecting above the trigger into the path of the sear, the latter having a stop surface for engaging the upper end of the hammer spring to limit its forward movement, spring means interposed between the trigger and the handle for urging the portion of the trigger below its pivot forwardly, whereby the upper end of the hammer spring will normally be positioned to the rear of the stop surface, whereby a rearward movement of the lower end of the trigger will bend the hammer spring, a plunger positioned in the path of the hammer spring, between said spring and the

barrel, and means comprising a rearwardly extending portion of the trigger for engaging the rear end of the sear and raising it to hammer spring releasing position as the trigger approaches its rearmost position.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,430,812	Jonassen	Oct. 3, 1922
1,990,302	Morche	Feb. 5, 1935
2,053,152	Kiesel	Sept. 1, 1936
2,382,514	Smith et al.	Aug. 14, 1945