June 11, 1935. C. H. LEONARD 2,004,531

REPEATING TOY GUN

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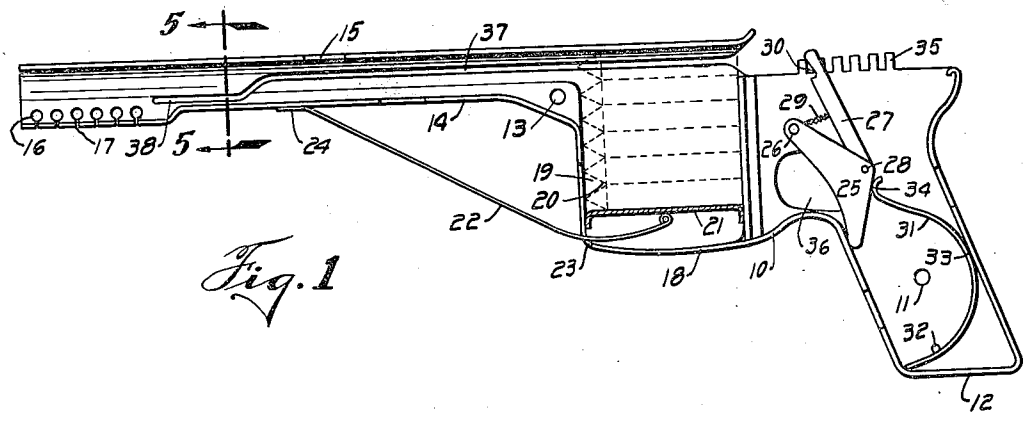


Fig. 1

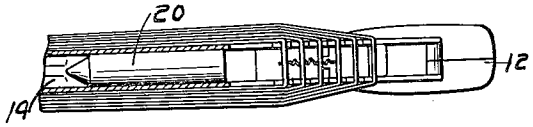


Fig. 2

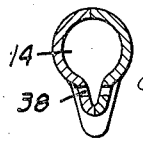


Fig. 5

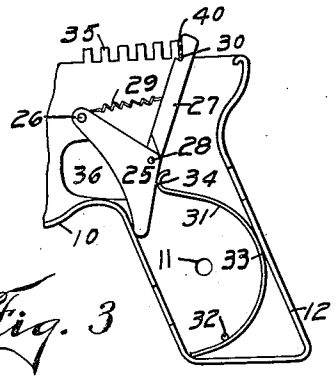


Fig. 3

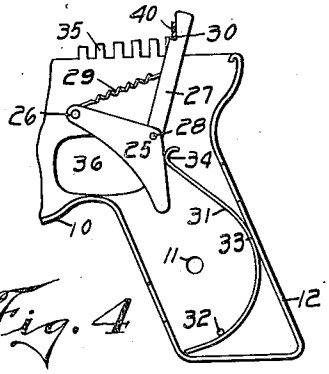


Fig. 4

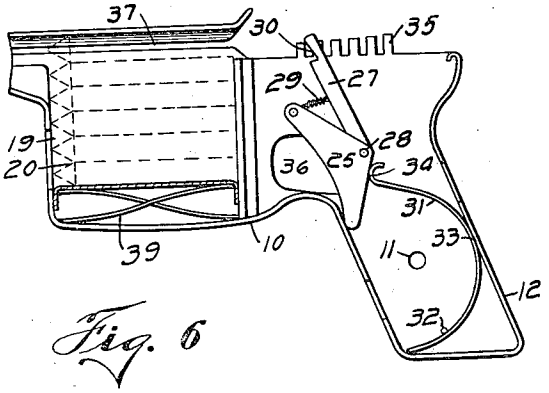


Fig. 6

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REPEATING TOY GUN

Charles H. Leonard, Detroit, Mich.

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5 Claims. (Cl. 124—14)

This invention relates to toys and more particularly to toy guns or the like in which a magazine feed is provided for projectiles of any suitable type and having a feeding mechanism so arranged in relation to the magazine that ammunition contained therein will be fed singly to firing position, and having a discharging mechanism provided by means of which the projectiles within the magazine will be automatically brought to firing position and discharged, providing thereby a repeating toy gun which so long as the magazine is provided with projectiles will continue to discharge such projectiles if the firing mechanism is manually operated.

The principal object of the present invention is to provide a new and improved toy gun of simple and inexpensive design provided with a simplified form of band holding and releasing mechanism in combination with a projectile holding magazine the parts being so arranged that but one projectile at a time is released by means of rubber bands.

Another object of the present invention is to provide a new and improved toy gun that will automatically repeat until the entire projectile-holding magazine has been emptied.

A still further object of my invention is to provide a new and improved toy gun having a magazine into which may be placed a number of projectiles in the form of darts, the gun also being provided with a discharging mechanism consisting of a plurality of elastic bands, the magazine and discharging mechanism being so constructed that the projectile is discharged or released simultaneously with the releasing of one of the elastic bands by the discharging mechanism.

Another object is to provide a new and improved construction of toy gun for shooting darts having means provided in the barrel thereof to clear the rubber bands as they are released by a releasing mechanism so that the band will be out of the way when the next dart is released.

The above and other objects of the invention will appear more fully from the following more detailed description and by reference to the accompanying drawing forming a part hereof and wherein

Fig. 1 is a side view of my dart gun with the foremost section removed so as to expose the working mechanism of said gun. The position of the darts in the magazine being illustrated in dotted lines;

Fig. 2 is a fragmentary plan top view of the butt end of the gun with part of the barrel broken away to illustrate the position of a dart, also the position of the rubber bands with trigger arm drawn back to operating position;

Figs. 3 and 4 are fragmentary views of the butt end of the gun showing in detail the operation of my novel trigger arrangement;

Fig. 5 is a section of the barrel taken substantially on the line 5—5 of Fig. 1;

Fig. 6 is an alternate construction of the magazine showing another type of spring operation to bring darts into firing position.

Referring now more particularly to the drawing, numeral 10 indicates the frame of the gun which may be constructed of any desired material, but as shown is formed of two similar male and female stampings or castings, said castings being of the pistol or revolver type. These castings are preferably secured together, by bolts or screws designed to pass conveniently through an aperture 11 formed in the handle 12 and an aperture 13 formed in the rear portion of the barrel 14. Along the upper portions of the barrel are provided notches 15 cut in the female portion of said barrel to receive prongs formed on the male portion of the barrel to insure perfect alignment of the male and female portions when placed together. The barrel 14 at its lower front end has provided holes 16 each hole being provided with a slot 17 to allow the operator to insert an elastic band, one in each hole, for a purpose later to be described. In the stock 18 between the barrel 14 and handle 12 is formed a magazine 19 to receive the darts 20. Slidably mounted within the magazine 19 is a plate 21 and a spring 22 one end of which engages the plate 21, passes out of the magazine 19 through aperture 23 terminating at the bottom of the barrel 14 where it is rigidly secured as at 24. This spring tends to push the plate 21 upwardly, and does so as the darts are released from the magazine. A trigger 25 is mounted within the handle 12, the same being pivoted on pin 26. A trigger arm is pivotally mounted by means of pin 28. A coil spring 29 is interposed between the pivot pin 26 and the trigger arm 27 to actuate the trigger arm forwardly when the trigger is pulled. The upper portion of the trigger arm is notched as at 30 for a purpose later to be described. A leaf spring 31 is held in place in the handle 12 by passing the same over the pin 32, allowing it to abut against the back of the handle 12 as at 33 and engaging the trigger 25 as at 34. A plurality of prongs 35 are formed on the rear upper portion of the handle 12 to receive the elastic bands when the gun is loaded for firing. The handle 12 is pro-

vided with an opening 36 through which the finger of the operator is placed to release the trigger. A slot 37 is formed in the barrel 14 to automatically guide the elastic bands through the normal power stroke at the end of which said elastic bands glide into a lower slot 38 so that the barrel is clear of bands and allows free passageway for the next dart. The barrel 14 is so shaped in proportion to receive darts 20 and allow them free passage the entire length of the barrel.

Fig. 6 illustrates an alternate construction of the magazine showing another type of spring 39 which consists of two spring members placed diagonally beneath the plate 21, said spring members being crossed and tending to push the plate upwardly when the pressure above the plate 21 is released.

The manner in which my device operates is as follows:

The operator places 6 darts within the magazine 19. As the darts are placed in the magazine the floor plate 21 is pushed downwardly resulting in a tension upon the spring contacting beneath the plate. The operator then takes six elastic bands and places them, one in each slotted hole at the lower front end of the barrel 14, said holes and slots being designated by numerals 16, 17 respectively. The bands 40 are then stretched toward the rear of the barrel, the band from the hole nearest the front end of the barrel engaging the rearmost prong 35 formed on the top of the handle 12, the elastic band which is fastened in the next hole near the front end of the barrel is then passed rearwardly and hooked over the prong to the left of the last prong engaged until the six bands have been attached, as best illustrated in Fig. 2 of the drawing. The trigger mechanism is then in a normal firing position as shown best in Fig. 3 of the drawing. The trigger finger is then placed through the opening 36 and the trigger 25 is pulled. When the trigger 25 is pulled there is imparted to the trigger arm 27 a vertical movement because the lower end of said trigger arm 27 is pivotally mounted on the trigger 25 as at 28. This movement raises the trigger arm 27 to the position shown in Fig. 4 of the drawing, the notched portion 30 on the upper part of the trigger arm comes into contacting engagement with the rubber band 40 in the recess between the two prongs immediately above the trigger arm. While this operation is being completed a tension is placed on the leaf spring 31, as best illustrated in Fig. 4 of the drawing. As the rubber band 40 is lifted out of and free of the prongs 35 the band contacts the rear end of the dart in the barrel, allowing the projectile to be thrown from the gun. To re-cock the gun the operator merely releases the pressure off the trigger 25 and the leaf spring 31 forces the trigger back to normal position, as shown best in Fig. 3 of the drawing. The coil spring 29 interposed between the pin 26 and the trigger arm 27 tends to pull the trigger arm toward the trigger when the trigger is released. The released elastic band travels along the groove 37 in the barrel 14 and is lodged in the groove 38 in the bottom of the barrel entirely out of the way of the next band to be released. After one dart has been released, the spring pressure on the plate 21 causes the plate to move upwardly thereby positioning another dart in the barrel. When the trigger is again released the band lodged in the next recess between the prongs is carried above the top of the prong holding the same, and the next dart is ejected from the barrel in the manner above described until the entire six darts have been fired.

I have disclosed a practical toy that is not only cheap to manufacture, but having few moving parts, there is practically nothing to get out of order.

It will be understood that the example shown in the drawing is merely illustrative and that the invention is not limited to the specific constructional details of such example, but that many changes, variations and modifications may be resorted to without departing from the principles of the invention.

I claim:

1. A repeating elastic band gun including a barrel having a bore therein and also having a slot intersecting the bore and extending to a point short of its front extremity, a magazine adapted to contain a plurality of projectiles, means for successively feeding projectiles from the magazine into the bore of the barrel, a plurality of elastic bands, means generally behind the barrel for maintaining the bands stretched to different positions therebehind, means farther forward and clear of the bore for retaining the front ends of the bands, the bands being arranged to travel in the slot and engage and project a projectile in the bore when released, a trigger, means connected to the trigger for independently releasing the bands upon successive actuations of said trigger and a receiving portion clear of the bore and connected to the slot for holding relaxed bands.

2. A repeating elastic band gun including a barrel having a bore therein, a magazine adapted to contain a plurality of projectiles, means for successively feeding the projectiles into the bore of the barrel, a plurality of elastic bands, rear abutment means generally behind the barrel for maintaining the bands stretched to different positions therebehind, front abutment means farther forward of the barrel, means adjacent said last named means and clear of the bore for holding relaxed bands, the bands being arranged to engage and project a projectile in the bore when released, a trigger means connected to the trigger for independently releasing the bands from said rear abutment means upon successive actuations of the trigger.

3. An elastic band gun comprising a supporting portion and a barrel attached thereto, said barrel having a guide slot extending longitudinally thereof and completely through the same; abutment means appurtenant the front end of the barrel to receive elastic band means, rear abutment means appurtenant the supporting portion for holding the rear end of the band means when stretched, said guide slot terminating in an open rear end directly in front of said rear abutment means, and means for releasing the band means whereby it may contract into said groove which then acts as a guide for released band means to compel it to travel in the barrel and thereby act upon an object therewithin, said slot having at its front end a laterally connecting portion for clearing released bands from the barrel.

4. A repeating elastic band gun comprising a supporting portion, a barrel carried thereby, a projectile holding magazine, means for feeding projectiles from the magazine into the barrel, the barrel having a guide slot extending longitudinally thereof and completely through the same, and the slot having an open rear end, abutment means carried by the barrel for supporting a plurality of elastic bands, rear abutment means for

supporting the opposite ends of the bands when stretched, said rear abutment means being located directly behind the open rear end of the slot, and means for individually releasing said elastic bands whereby they may contact into the groove to propel the projectiles from the barrel, said slot having at its front end a laterally connecting portion for clearing released bands from the barrel.

5. A repeating elastic band gun comprising a supporting portion, a barrel carried thereby, a projectile holding magazine, means for feeding projectiles from the magazine into the barrel, the barrel having a guide slot extending longitudinally thereof and completely through the same and the slot having an open rear end, abutment means carried by the barrel for supporting a plurality of elastic bands, rear abutment means for supporting the opposite ends of the bands when stretched, said rear abutment means being located directly behind the open rear end of the slot, means for individually releasing said elastic bands whereby they may contract into the groove to propel the projectiles from the barrel, said slot having at its front end a laterally connecting portion for clearing released bands from the barrel.

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