Feb. 20, 1951 B. C. LOEW 2,542,777

PELLET PROJECTING TOY GUN

Filed April 22, 1946

Fig. 1.

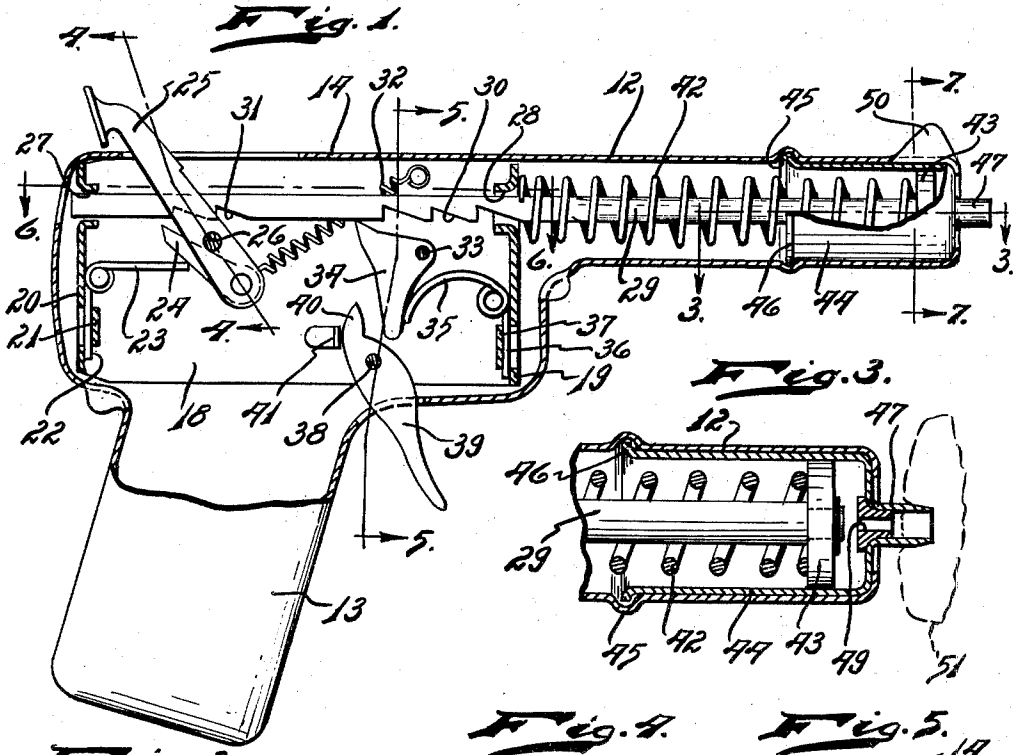



Fig. 3.




Fig. 2.

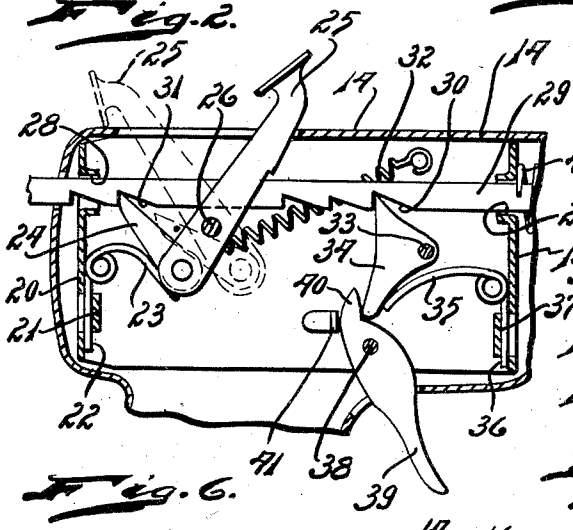



Fig. 4.

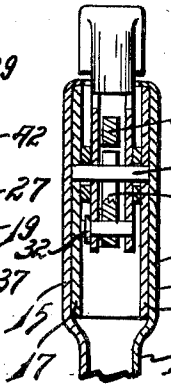



Fig. 5.

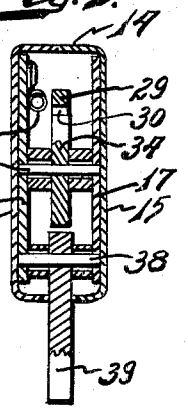



Fig. 6.

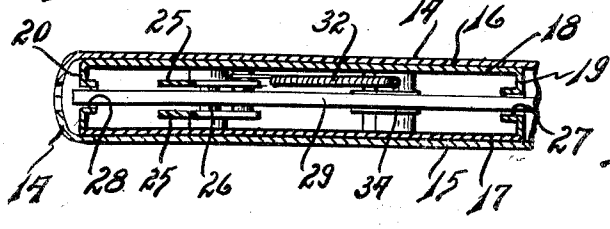



Fig. 7.




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## PELLET PROJECTING TOY GUN

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5 Claims. (Cl. 124—15)

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My invention relates to a new and useful improvement in a pellet projecting toy gun of the pistol type and it is an object of the present invention to provide a toy gun which will have novel and attractive features interesting to a child using the same. Another object of the invention is a toy gun so constructed and arranged that the gun may be easily and quickly moved to cocked position against the compression of a spring and cocked at various positions of movement so that the degree of compression of the spring may be varied and thus the propelling power of the gun varied.

Another object of the invention is the provision of a toy gun of this class having a pellet receiving portion projecting outwardly from the gun barrel and so arranged and constructed that it may be inserted into a soft article such as a potato or the like to fill the pellet receiving portion and break off the necessary amount of the article into which inserted so that the portion of article inserted therein may be used as a pellet to be propelled by the gun.

Another object of the invention is the provision in a toy gun of this class of a barrel having a reenforced cylinder forming portion to provide a substantially air tight construction open at one end and in which a piston is adapted to reciprocate.

Other objects will appear hereinafter.

It is recognized that various modifications and changes may be made in the detail of structure illustrated without departing from the invention itself and it is intended that such variations and changes shall be encompassed within the scope of the claims which form a part hereof.

Forming a part of this specification are drawings in which,

Fig. 1 is a central, longitudinal, vertical, sectional view of the invention with parts broken away and parts shown in section and parts shown in side elevation,

Fig. 2 is a central, vertical, sectional view in fragment showing parts illustrated in Fig. 1 but in a different position,

Fig. 3 is a slightly enlarged, fragmentary, central sectional view of the end of the barrel,

Fig. 4 is a fragmentary sectional view taken on line 4—4 of Fig. 1,

Fig. 5 is a sectional view taken on line 5—5 of Fig. 1,

Fig. 6 is a fragmentary sectional view taken on line 6—6 of Fig. 1,

Fig. 7 is a sectional view taken on line 7—7 of Fig. 1.

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The main body of the gun is preferably formed from a metal stamping and composed of two complementary parts which, when brought into registration and secured together in any desirable manner, will form a composite body. The structure embodies a barrel 12, a body 14 and a gripping portion 13. The body 14 is provided with side walls 15 and 16 and positioned within the body portion and engaging the side walls 15 and 16, are the plates 17 and 18 which are connected together at their opposite ends to provide the end plates 19 and 20. Punched outwardly from the end plate 20 is a tongue 21 and engaging in this punched out tongue is one end 22 of a spring the opposite end 23 of which bears against a dog 24 rockably mounted on the end of the cocking lever 25 which is pivoted by means of the pin 26 to the plates 17 and 18. Formed in the walls 19 and 20 are registering openings 27 and 28 each of which has an inwardly projecting guide sleeve surrounding the same as clearly shown in Fig. 2. Slidably projected through these openings 27 and 28 is a rod 29 which has two sets of notches 30 and 31 formed therein. A coil spring 32 is connected at one end to one of the plates 17 or 18 and at the opposite end to the lower end of the lever 25. Pivotally mounted on the pin 33 is a dog or pawl 34 one end of which is adapted to engage in the notches 30 and the other end of which may be engaged by the nose 40 of the trigger 39 which is pivotally mounted on the pin 38. An abutment plate 41 is mounted on the plate 18 to serve as an abutment and prevent rocking of the trigger 39 beyond a predetermined distance in one direction.

Positioned in the barrel 12 is a coil spring 42 one end of which bears against the plate 19 and the other end of which bears against a piston 43 which is fixedly mounted on the rod 29. This piston 43 snugly engages in a cylinder 44 which is cup shaped and positioned in the barrel 12 adjacent the end thereof. This barrel is provided with the internal groove 45 in which engages the outwardly turned flange 46 on the open end of the cup-shaped cylinder 44. The base of this cup-shaped cylinder is pressed outwardly to provide the tubular extension 47 and pressed into this tubular extension 47 is a bushing having the constricted passage 49 formed therethrough. A lug 50 is pressed upwardly on the end of the barrel to provide a sight.

In loading the device any suitable pellet may be positioned in the pellet receiving tube 47. In the drawings, however, I have illustrated this tube 47 inserted into a potato 51. When this

tube 47 is inserted into a potato 51 and slightly tilted the portion of the potato which is engaged within the tube 47 will break off and this portion will serve as a pellet to be propelled.

The cocking lever 25 is moved from the position shown in Fig. 1 to the right. The lever swings on the pin 26 as a pivot and the pawl will be pressed upwardly by spring 23 to engage in one of the notches 31. As this movement continues toward the full line position of the lever 25 as shown in Fig. 2 the rod 29 will be drawn inwardly rearwardly of the gun, that is to the left in Fig. 1 and as the notches 30 ride over the pawl or dog 34 this pawl or dog 34 will snap into the notches 30, the throw of the lever 25 being such that with each operation the pawl 34 may ride over one or more notches 30. When the lever 25 is rocked to the right of Fig. 1 a distance sufficient to move the rod 29 to a position at which the dog 34 may engage in notch 30, the lever 25 may then be rocked to the position shown in Fig. 1 and the pin 26 will have engaged the dog 24 and moved it out of engagement with the notches 31, as shown in Fig. 1, thus leaving the rod 29 free for movement to the right upon disengagement of the dog 34 from the notches 30. When the pressure toward the forward end of the gun on the lever 25 is released the spring 32 will serve to restore the lever 25 to the dotted line position shown in Fig 2 or the full line position shown in Fig. 1. The dog or pawl will, however, prevent the rod 29 from moving outwardly or to the right of the figure in response to the compression of the spring 42. By repeating this action the pawl 34 may be brought into a succeeding notch 30 to again move the rod 29 so as to further compress the spring 42. Thus the spring 42 may be compressed to various degrees. The gun should preferably be cocked before a pellet is engaged in the tube 47. After the gun has been cocked and the pellet is engaged in the tube 47 the trigger 39 may be actuated to rock the dog or pawl 34 out of engagement with the notch 30 whereupon the piston 43 will move rapidly in the cylinder 44 to compress the air and through the compressed air force the pellet out of the pellet receiving tube 47. It is obvious that this speed of movement of the piston 43 will be varied depending upon the amount of compression of the spring 42 and thus the velocity of the pellet as it leaves the tube 47 may be varied. Experience has shown that a toy gun of this type is quite interesting and attractive to a child and that the pellet, when propelled from the tube 47, will travel several yards with a fair degree of accuracy during the first portion of its travel. By using a potato or some other vegetable as a means for providing the pellets a toy gun which may be economically operated is provided and one for which the child may easily obtain the desired "ammunition." Experience has also shown that the gun so constructed and arranged is one which is durable and capable of withstanding the rough usage to which a child subjects a toy while at the same time the gun is sufficiently light and easy to handle.

What I claim as new is:

1. A toy gun of the class described, comprising: a barrel; a cylinder portion in said barrel and closed at one end and having an opening formed through said closed end; a piston slidably mounted in said cylinder; a spring for normally urging said piston toward said closed end; a piston rod connected to said piston; a plurality of notches on said piston rod; a rockable lever; a dog carried by said lever and adapted, upon rocking of said lever in one direction, for engaging in one of said notches and adapted, upon rocking of said lever subsequent to engagement in said notches, for moving said piston rod longitudinally to retract said piston against the compression of said spring, said piston rod having a second set of a plurality of notches; a latch mechanism for successively engaging in said second set of notches and securing said piston against movement from retracted position; and a trigger on said gun engageable with and adapted for releasing said latching mechanism.

2. A toy gun of the class described, comprising: a barrel; a cylinder portion on said barrel closed at one end and having an opening formed through said closed end; a piston slidably mounted in said cylinder; a piston rod connected to said piston; a spring for normally urging said piston towards said closed end of said cylinder; means for moving said piston rod longitudinally in step by step movement to retract said piston against the compression of said spring; and a latch mechanism for engaging said piston rod in the step by step movement and preventing return of the same; and a trigger engageable with and operable for releasing said latch mechanism at any of said steps.

3. A toy gun of the class described, comprising: a barrel; a cylinder portion on said barrel having a closed end and provided with an opening through said end; a tube projecting outwardly from the closed end of said cylinder and communicating with the interior thereof through said opening; a piston slidably mounted in said cylinder; a piston rod connected to said piston; a spring embracing said piston rod and normally urging said piston toward said closed end, said piston being retractable from said closed end against the compression of said spring; means for retracting said piston various distances from said closed end; releasable latch means for securing said piston in various retracted positions; and a trigger on said gun engageable with and operable for releasing said securing means at any of said positions.

4. A toy gun of the class described, comprising: a barrel; a cylinder portion in said barrel adjacent one end; a tube projecting outwardly from said cylinder and communicating with the interior thereof at said closed end; a piston slidably mounted in said cylinder; a spring for normally urging said piston toward said closed end; a piston rod connected to said piston and having a set of a plurality of notches formed therein; a rockable lever; a dog carried by said lever and adapted, upon rocking of said lever in one direction, for engaging in one of said notches and adapted upon rocking of said lever in the same direction subsequent to engagement of said dog in said notches for moving said piston rod longitudinally to retract said piston against the compression of said spring, said piston rod having a second set of a plurality of notches; a latch mechanism for successively engaging said second set of notches and securing said piston against movement from retracted position at various positions of its movement; a trigger on said gun engageable with and operable for releasing said latch mechanism; and a pin carried by said lever and moveable, upon rocking of said lever in the opposite direction a predetermined distance, for engaging and moving said dog out of engagement with said piston rod.

5. A toy gun of the class described, compris-

ing: a barrel; a cylinder portion in said barrel adjacent one end; a tube projecting outwardly from said cylinder and communicating with the interior thereof at said closed end; a piston slidably mounted in said cylinder; a spring for normally urging said piston toward said closed end; a piston rod connected to said piston and having a set of a plurality of notches formed therein; a rockable lever; a dog carried by said lever and adapted, upon rocking of said lever in one direction, for engaging in one of said notches and adapted upon rocking of said lever in the same direction subsequent to engagement of said dog in said notches for moving said piston rod longitudinally to retract said piston against the compression of said spring, said piston rod having a second set of a plurality of notches; a latch mechanism for successively engaging said second set of notches and securing said piston against movement from retracted position at various positions of its movement; a trigger on said gun engageable with and operable for releasing said latch mechanism; a pin carried by said lever and moveable, upon rocking of said lever in the opposite direction a predetermined distance, for engaging and moving said dog out of engagement with said piston rod; and a spring means normally tending to move said lever in said opposite direction.



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