Jan. 30, 1951 T. H. PAYNE 2,539,968

CARTRIDGE STRUCTURE FOR TOY GUNS

Filed April 28, 1947

Fig. 1.

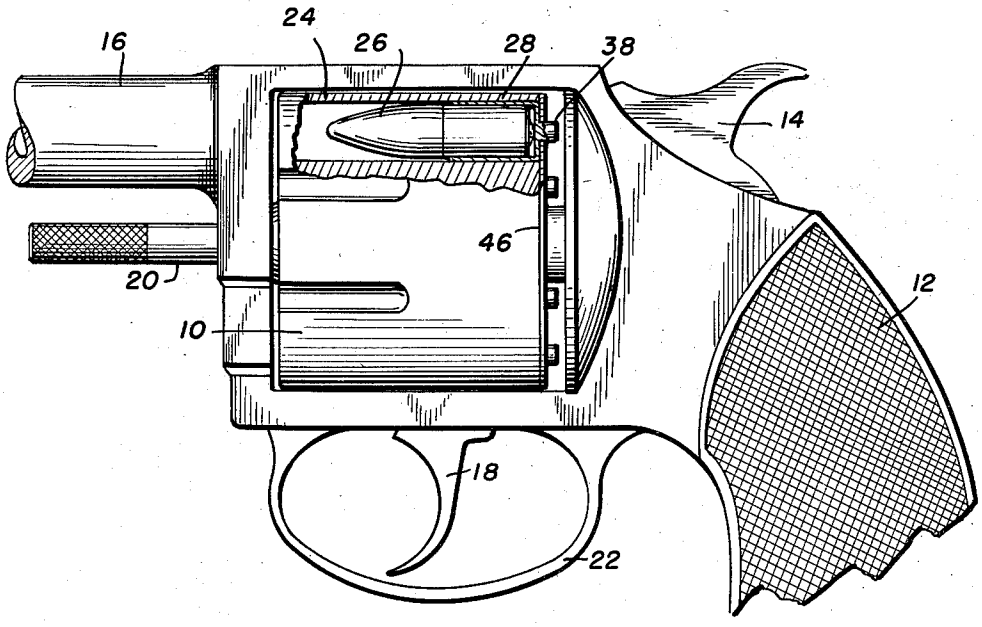


Fig. 3.

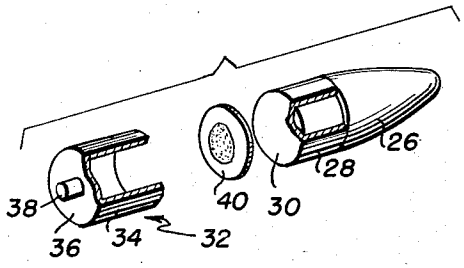


Fig. 2.

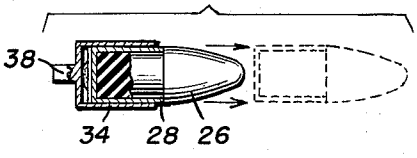


Fig. 4.

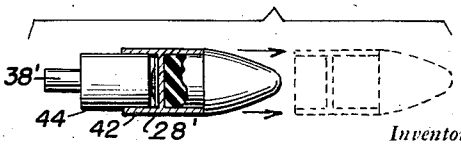
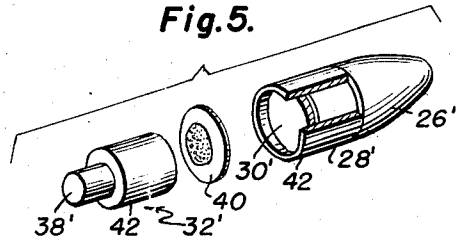


Fig. 5.



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CARTRIDGE STRUCTURE FOR TOY GUNS

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4 Claims. (Cl. 102—38)

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This invention relates generally to toy guns, and more particularly to toy guns commonly referred to as cap pistols and revolvers, and still more specifically to a cartridge structure in which the firing pin is incorporated, the percussion cap being insertable between this pin and the base of the bullet or projectile and the explosion of the percussion cap fires the said bullet out of the barrel of the gun.

A primary object of this invention is to provide means for shooting various projectiles of bullet, dart, or other forms from a toy gun.

Another object of this invention is to provide a cartridge construction which may be used with various types of toy guns, cannon revolvers, and other types of toys adapted to eject missiles.

Another object of this invention is to provide a cartridge structure which may be loaded in the gun from the barrel end, or, in some instances, may be loaded into the rear end of multi-chambered or revolver-type of gun.

Still another object of this invention is to provide a cartridge structure in which the explosion chamber is contained within the cartridge, thus making the device more safe for the use of children.

And a last object to be specifically mentioned is to provide a device of this character which is relatively inexpensive to manufacture, extremely simple, convenient and safe to use, and which is generally efficient in operation.

With these objects definitely in view, this invention resides in certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail in the specification, particularly pointed out in the claims hereunder appended, and illustrated in the accompanying drawings which form a material part of this application, and in which—

Figure 1 is a fragmentary side elevational view of a revolver-type toy gun, with portions broken away and the underlying portions shown in elevation and in section, to facilitate the illustration of this invention and to amplify the disclosure of how this cartridge is used in the revolving cylinder thereof;

Figure 2 is a vertical sectional view of a preferred cartridge construction, the projectile and the metal cup on the end thereof being shown in dash line in a second position, as when the percussion cap has been exploded;

Figure 3 is a grouped view of the component parts of this cartridge construction;

Figure 4 is a vertical sectional view of a preferred modification of this bullet construction, the portion ejected upon explosion of the percussion cap being shown in dash lines; and

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Figure 5 is another group view of the elements constituting this modified form of the present invention.

Referring now to the drawings in detail, it will be noted that the environment wherewith this invention is to be used includes a toy gun of any suitable character, illustrated in the drawing as a revolver-type with a revolving cylinder 10, a pistol grip handle 12, a hammer 14, barrel 16, and a trigger 18. The gun will also have a complement of a cylinder locking pin 20 and a finger guide 22, together with other elements as the particular construction requires.

In the device illustrated, the cylinder is provided with a plurality of cylindrical chambers 24 which may be selectively aligned with the bore of the barrel 16 by fractionally rotating the cylinder into any one of a plurality of positions, in which position the cylinder may be locked by the locking pin 20, in a manner unnecessary to detail here.

The cartridge construction includes a bullet portion 26 which may be of tapered form as shown and will ordinarily be constructed of resilient material, the base of the bullet being of reduced diameter and rigidly secured within a cup 28 which has a cylindrical tubular portion and an end wall 30. The external diameter of this cup 28 is substantially equal to the greatest diameter of the bullet 26, and the external diameter of the cup will ordinarily be considerably less than the diameter of the chamber 24 and the bore of the barrel 16.

A firing pin 32 having a tubular portion 34 of an internal diameter adapting the same to be slidably mounted on the cup 28, and end wall 36 and a hammer contacting pin 38, is incorporated with this cartridge construction. The internal diameter of the tubular portion 34 is substantially equal to the external diameter of the cup 28, and the external diameter of the tubular portion 34 should be very little less than the diameter of the chamber 24 and the bore of the barrel. It will be understood that a percussion cap 40, ordinaily constructed of two layers of paper with a very small charge of gun powder contained therebetween, will be placed between the end wall 30 of the cup 28 and the end wall 36 of the firing pin 32.

In a preferred modified form of this invention, illustrated in Figures 4 and 5, the cup 28' is constructed with portions 42 comprising rearwardly

extending portions of the tubular part of the cup. There is thus formed on the rear of the cup a short tube adapted to receive the enlarged portion 44 of the modified firing pin 32'. It will be noted that modified form of firing pin 32' has a hammer-engaging pin 38'. The end wall 30' of the modified cup member and the bullet 26' are all substantially unaltered from the modification illustrated in Figures 2 and 3, the variation in structure being limited to the changes necessitated in the cup and firing pin in order to mount the firing pin to slide within an extending portion of the cup rather than exteriorly thereof.

The operation of this invention will be clearly understood from the foregoing description of the mechanical details thereof, taken in connection with the above recitation of the objects sought to be achieved by this invention but, in recapitulation, it may be noted that the cartridge construction illustrated in Figures 2 and 3 is primarily adapted to be loaded from the front end of the barrel or the cylinder, while the modified form illustrated in Figures 4 and 5 is primarily adapted for loading into the rear end of the cylinder or analogous structure. In Figure 1 there is illustrated a cylinder having a rear plate 46 apertured at a plurality of points to receive the hammer-engaging pins 38, and it will be understood that in constructions where such a cylinder is to be loaded from the rear end, the apertures registering with the cylinders 24 must be enlarged to a diameter slightly in excess of the diameter of the cup 28'. It is a feature of this invention that an explosion chamber is incorporated with the cartridge construction and that this device will operate satisfactorily in toy guns and cannons and the like which are not manufactured with precision. This explosion chamber is, of course, defined by the walls of the cup and the forward end of a portion of the firing pin. When a cartridge construction of the type illustrated in Figures 2 and 3 is used, the percussion cap 40 is inserted between the wall 30 of the cup and the wall 36 of the firing pin, while in the other modified form of this invention, the percussion cap is inserted between the wall 30' of the cup and the front end of the enlarged portion 42 of the firing pin 32'. In either case, the hammer 14 will strike the hammer contacting pin 38 or 38', and the percussion cap will be exploded to drive the bullet and the cup out of the chamber 24 and the barrel 16 of the gun. The firing pin, in either case, will not be ejected, and will ordinarily remain in place to facilitate reloading.

Though there has been shown two preferred embodiments of this invention, this application is not limited to these particular embodiments, but it is desired to include in the scope of this invention the construction, combination and arrangement of parts and portions substantially as set forth in the appended claims.

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

1. A cartridge for use with a toy cap gun having a cartridge chamber and a hammer, comprising a bullet, a non-resilient cup on the base of said bullet and adapted to be projected therewith, a firing pin slidably mounted on said cup, and a percussion cap inserted between said cup and said pin.

2. A cartridge for use with a toy cap gun having a cartridge chamber and a hammer, comprising a bullet, a non-resilient cup on the base of said bullet and adapted to be projected therewith, a firing pin slidably mounted on said cup, and a percussion cap inserted between said cup and said pin, said firing pin having a portion thereof enclosed by a rearwardly extending portion of said cup.

3. A cartridge for use with a toy cap gun having a cartridge chamber and a hammer, comprising a bullet, a non-resilient cup on the base of said bullet and adapted to be projected therewith, a firing pin slidably mounted on said cup, and a percussion cap inserted between said cup and said pin, said cup having a tubular portion secured to said bullet and an end wall, and said tubular portion extending beyond said wall and enclosing a portion of said firing pin to receive said percussion cap and to provide an explosion chamber.

4. A cartridge for use with a toy cap gun having a cartridge chamber, a barrel and a hammer, comprising a bullet, a non-resilient cup on the base of said bullet and adapted to be projected therewith, a firing pin slidably mounted on said cup, and a percussion cap inserted between said cup and said pin, said cup being rigidly secured to said bullet and of an external diameter substantially equal to the bore of said barrel.

THOMAS H. PAYNE.

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