C. A. BUSH.

CARTRIDGE.

APPLICATION FILED JULY 27, 1916.

1,243,253. Patented Oct. 16, 1917.

Fig. 1.

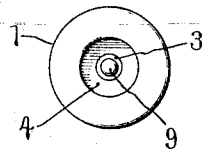


Fig. 2.

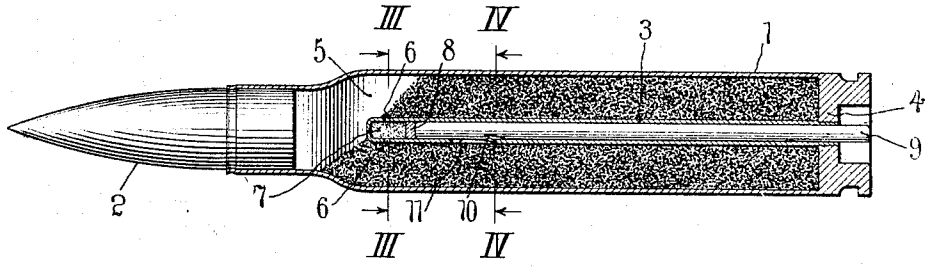


Fig. 3.

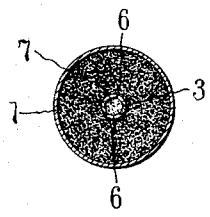


Fig. 4.

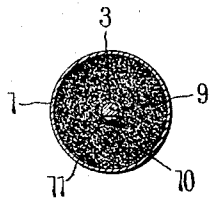
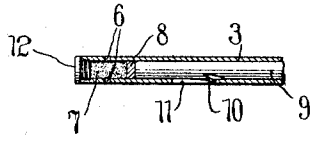


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CARTRIDGE.

1,243,253. Specification of Letters Patent. Patented Oct. 16, 1917.

Application filed July 27, 1916. Serial No. 111,687.

To all whom it may concern:

Be it known that I, CHARLES ABBOTT BUSH, a citizen of the United States, and resident of the borough of Brooklyn, in the city and State of New York, have invented a new and useful Improvement in Cartridges, of which the following is a specification.

This invention relates to an improvement in cartridges with the object in view of providing a device which will ignite the charge at the forward end of the powder chamber, thereby increasing the explosive force of the powder, accelerating the projectile force and lessening the recoil.

Another object is to provide a device in which the firing pin is automatically locked in position and against unintentional displacement.

Another object is to provide a device having lateral openings through which the flame from the percussion powder or fulminate passes and is directed into the charge of powder nearest the air chamber, one of said openings being always in the powder, even when the cartridge is in a vertical position.

A still further object is to provide certain improvements in the construction, form and arrangement of the parts whereby the above and other objects may be effectively carried out.

Some of the advantages of this improved cartridge over the cartridges now in common use are that the range of firing is increased; that the powder charge is ignited first near the air chamber, thereby causing the charge to burn rearward of the projectile, compressing the air in the chamber and taking a part of the recoil and unequal strain caused at first fire by the inertia of the projectile. Furthermore, the cartridge may be fired in a vertical position as effectively as in any other position.

A practical embodiment of my invention is represented in the accompanying drawings in which,

Figure 1 represents a rear end view of my improved cartridge,

Fig. 2 is a longitudinal central section through the shell and the adjacent parts,

Fig. 3 is a vertical section taken in the plane of the line III, III, of Fig. 2,

Fig. 4 is a vertical section taken in the plane of the line IV, IV, of Fig. 2, and

Fig. 5 is a detail section of a modified form of tube and means for inserting the fulminate.

The shell of the cartridge is denoted by 1, and is provided with a projectile 2 which is secured to the shell in any well known and approved manner.

A longitudinally arranged tube 3 is screwed or otherwise secured to the end wall 4 of the shell 1, the forward end of which tube terminates in the air chamber 5 and has a plurality of lateral openings 6 in its sides, which form passages into the air chamber 5 and powder in the shell.

A fulminate 7 is held in the forward end of the tube 3 by means of a wad 8 of metal or other suitable material.

A firing pin 9 is inserted in the tube 3, with its outer end engaging the wad 8 and the inner end projecting a proper distance through the end wall 4 in position to be struck by the firing piece of the gun (not shown). This firing pin 9 is held in the tube 3, against unintentional displacement by means of a spring-actuated tongue 10, cut from the pin, which tongue extends laterally a sufficient distance to engage a longitudinal slot 11 in the tube 3. When the pin is inserted in the tube, the tongue 10 will be compressed by the walls of the tube until it reaches the slot 11, where it will spring outwardly and thus lock the pin in the tube. The slot 11 is made long enough to allow the tongue to slide therein to the limit of the outward or firing movement of the pin. After the pin is struck by the firing piece (not shown), and the fulminate ignited, the flames therefrom will pass through the openings 6 to the powder in the shell nearest the air chamber, which charge will burn rearward from the projectile. The air in the chamber is thereupon more and more compressed as the charge uniformly burns rearward toward the rear wall 4. The air in the chamber being elastic will absorb a part of the recoil and sudden strain caused at first fire by the inertia of the projectile.

It has also been recognized that where all the powder in the charge is consumed, as in my improved cartridge, the usual erosion of the gun barrel is avoided.

While I have shown a cartridge of the type used in magazine rifles, machine guns, etc., it will be understood that my device is particularly well adapted for use in other ammunition having projectiles.

Another important feature of this invention is the adaptation of an ordinary or service cartridge shell for containing the firing pin and tube.

It will also be seen that by reason of the construction of my device in the manner above described, I am enabled to fire a cartridge in a vertical position with very effective results.

In Fig. 5, I have shown a tube having a plug 12 screwed therein, the function of which is to allow the fulminate to be placed therein from the forward end instead of rear end as shown in Figs. 1 to 4 inclusive.

It will be understood that various changes may be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not intend to be limited to the specific details herein shown and described except as they are mentioned in the claims.

What I claim is:

1. In a cartridge, a shell, a tube arranged longitudinally therein and having lateral openings near the end, a fulminate in the forward end of said tube for igniting the charge through said openings, a pin in intimate contact with the tube throughout its length, and coacting means on the pin and tube for retaining the pin in the tube.

2. In a cartridge, a shell, a tube arranged longitudinally therein and having lateral openings near the forward end, a fulminate in the forward end of said tube for igniting the charge through said openings, a pin slidable in the tube for igniting said fulminate, means for retaining said pin in the tube, said means comprising a slot in the tube and a tongue on the pin.

3. In a cartridge, a shell, a tube arranged longitudinally therein and having lateral openings in the forward end, a fulminate in the forward end of said tube for igniting the charge through said openings, a pin slidable in the tube for igniting said fulminate, means for retaining said pin in the tube, said means comprising a slot in the tube and a spring-actuated tongue on the pin.

4. In a cartridge, a shell, a tube arranged longitudinally therein and having lateral openings near the forward end, a fulminate in the said end for igniting the charge through said openings, a plug for securing the fulminate in the tube, a pin slidable in the tube for igniting said fulminate, means for retaining said pin in the tube, said means comprising a slot in the tube and a tongue on the pin.

In testimony, that I claim the foregoing as my invention, I have signed my name this 24th day of July 1916.

CHARLES ABBOTT BUSH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."