Oct. 20, 1925. 1,557,696

C. LE R. HOLDEN

LOADED SHOT CARTRIDGE

Filed July 17, 1922

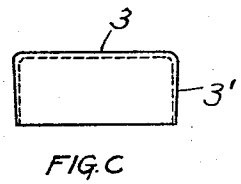


FIG. C

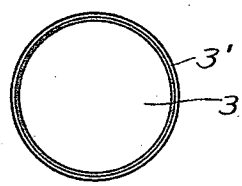


FIG. D

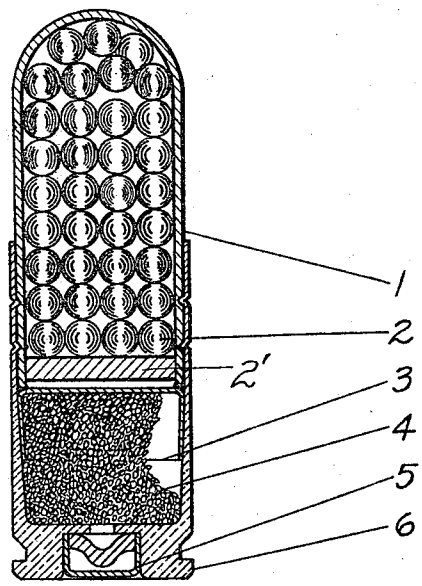


FIG. A

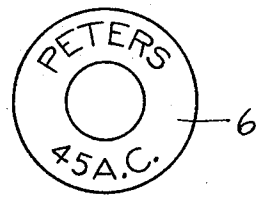


FIG. B

INVENTOR

C. L. Holden

By Nissen & Crane

ATTORNEYS.

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UNITED STATES PATENT OFFICE.

CHARLES LE ROY HOLDEN, OF KINGS MILLS, OHIO, ASSIGNOR TO THE PETERS CARTRIDGE COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

LOADED SHOT CARTRIDGE.

Application filed July 17, 1922. Serial No. 575,552.

To all whom it may concern:

Be it known that I, CHARLES LE ROY HOLDEN, a citizen of the United States, residing at Kings Mills, in the county of Warren and State of Ohio, have invented certain new and useful Improvements in Loaded Shot Cartridges, of which the following is a specification.

My invention relates to loaded shot cartridges and has for one of its objects the provision of a device of this character which will give improved distribution of shot and cover long ranges.

A further object is the provision of a loaded shot cartridge in which there is means for preventing the exploded powder charge from coming in contact with the shot charge.

A still further object is the provision of means for providing a member which will have a gas-tight connection with the firearm in which the cartridge is exploded between the shot and powder charges.

Other objects will appear hereinafter.

An embodiment of my invention is illustrated in the accompanying drawing forming a part of this specification and in which—

Fig. A is a central sectional view of a loaded cartridge embodying my invention;

Fig. B is a bottom view of the same;

Fig. C is a side view of a member used in the construction; and

Fig. D is a bottom view of the cup member shown in Fig. C.

Referring more particularly to the drawing, I have indicated a tubular container 1 for enclosing a shot charge 2. The member 1 is preferably closed at its outer or upper end, as viewed in Fig. A. This closed end may be semi-spherical, as indicated, or have any other desired configurations. The bottom end of the container 1 may be closed by a wad 2′ of ordinary or any preferred construction. The container 1 may be formed of any desirable substance, either metallic or non-metallic, which will hold the shot in place while being propelled through the barrel of the firearm and prevent the shot from coming in contact with the barrel of said firearm. This has a particular advantage in preventing the shot from sticking to the gun barrel or "leading" the latter.

A cup member 3 has its bottom disposed against the lower open end of container 1 with the walls of said cup extending downwardly partially over a powder charge 4 which is disposed in the bottom of a shell or cartridge 6. The cup 3 has its side walls 3′ of yieldable material so that when the cartridge is used the wall 3′ of the cup will expand out against the barrel of the firearm and prevent the explosive gases from passing by said cup. This cup therefore provides a sealing means and also provides a means for preventing the excessive heat of the exploded gases from melting or injuring the shot adjacent said said cup. The wall 3′ of the cup is preferably thinner at the open side of the cup than adjacent the bottom, as clearly indicated by dotted lines in Fig. C. This construction helps the wall 3′ to be expanded easily by the exploded powder charge.

The shell 6 may be provided with a primer 5 of ordinary or any preferred construction.

The cup 3 is preferably of metal such as copper, brass, gilding, tin, cupro-nickel, steel or iron, or any other metal which may be suitable for this purpose. The sheet metal cup 3 may be formed in any desired manner to have cylindrical walls gradually tapering in cross-section toward the bottom of the shell.

With the use of my improved cup 3 a means is provided for uniformly controlling barrel pressures and velocities, which is necessary to insure proper functioning of automatic or semiautomatic firearms. This improvement is equally applicable to automatic, repeater, double barrel or single barrel firearms.

The cup 3 is propelled through the barrel of the firearm immediately behind the shot container, thus preventing the latter from becoming torn, distorted or ruptured by the gases created by the explosion of the powder charge, and insures uniform and perfect functioning. As soon as the shot leaves the muzzle of the firearm it is released from the protection of the gun barrel and the covering 1 breaks, permitting the shot to spread but slightly. The cup 3 immediately breaks up upon leaving the gun barrel.

The cup 3 will be held substantially intact until it reaches the end of the gun barrel when the force of the explosion will tear it to pieces since it is no longer pro-

tected by the gun barrel. The covering on the shot is also torn as soon as the charge leaves the gun barrel for the same reason.

The shell 2 may be indented circumferentially at 7 to more securely hold the covering or shot container 1 in the open end of the shell with a large portion of the container 1 projecting from the shell. The container 1 is therefore in the shape of an elongated cup with a semi-spherical closed end, as shown in Fig. A. The shot charge may vary according to the length of the elongated cup 1. The wad 2′ holds the shot charge in place in the elongated cup container. After the container is inserted into the open end of the shell, as shown in Fig. A, the wad 2′ occupies a position intermediate the ends of the shell adjacent the bottom of the sheet metal gas check cup 3, affording an air space or cushion ahead of the cup 3.

I claim:—

1. A loaded shot cartridge comprising a shell open at one end and closed at the other; a charge of powder in said shell adjacent the closed end thereof; a charge of shot; a covering around the shot closed at one end and having its other end extending into the shell with the end in the shell open and its other end closed; a wad in the open end of the shot covering; and a cup in the shell with its open side facing toward the powder charge and its walls disposed against the inner wall of the shell.

2. A loaded shot cartridge comprising a shell proper; a charge of powder in the bottom portion of the shell; a cup disposed against the powder charge with its side walls extending partially over said powder charge and of yieldable non-expolsive material; and a charge of shot having a covering therefor extending into the shell in close proximity to the bottom of said cup, the edges of said covering being extended beyond said shot to provide an air space between the latter and said cup.

3. A loaded shot cartridge comprising a shell proper; a cup disposed in said shell with its open side disposed toward the bottom of the shell and its side walls of yieldable material tapering gradually to its free edge and adapted to expand in use to form a gas-tight joint between said cup and firearm in which the device is used; a charge of powder in the shell between the bottom of the latter and said cup; and a shot charge having a covering the edges thereof extending beyond said shot and adjacent said cup.

4. A loaded shot cartridge comprising a shell proper; shot and powder charges in the shell; and a cup in the shell between said shot and powder charges with the sides of said cup of yieldable material and engaging said shell, there being an air space between said shot charge and said cup, the open side of said cup being disposed toward the bottom of the shell and disposed for a short distance only over the powder charge.

5. A loaded shot cartridge comprising a shell proper open at one end and closed at the other; a charge of powder in the shell adjacent the closed end thereof; a cup in said shell with its open side disposed toward the closed end of the shell and partially surrounding the powder charge; a charge of shot extending into the shell; a covering on the shot charge open at its end in the shell; and a wad between the cup and said shot charge with a portion of the shot covering spacing said wad from the bottom of the cup.

6. A loaded shot cartridge comprising a shell proper open at one end and closed at the other end, a charge of powder in the shell adjacent the closed end thereof, a cup-shaped gas check in said shell intermediate the ends thereof with its open side disposed toward the closed end of the shell and partially surrounding the powder charge, a charge of shot, a container for said shot extending into the open end of said shell to the bottom of said gas check, and a wad for holding the shot charge in said container and occupying a position adjacent the gas check when said container is in said shell.

7. A loaded shot cartridge comprising a shell, a charge of explosive in the base of the shell, a sheet metal inverted cup with walls adapted to be expanded radially to form a gas check in the gun barrel upon discharge of the cartridge, a shot charge, a container for the shot charge and extending into the shell to said cup, said container being adapted to prevent the shot charge from contacting with the inner surface of gun walls, said container being further adapted upon discharge from the gun barrel to break and permit the shot to be free to spread.

8. A loaded shot cartridge comprising a shell, a charge of explosive therein, an inverted cup of sheet metal with the circumferential cylindrical portion gradually tapering in cross-section toward the bottom of the shell, a shot charge, and a container for the shot charge extending into the shell to said cup and adapted to prevent the shot charge from contacting with walls of the gun barrel upon discharge of the cartridge and to allow the shot charge to spread after passage therethrough.

9. A loaded shot cartridge comprising a shell, an exlosive charge in the base of the shell, an inverted cup with its cylindrical wall extending toward the bottom of the shell, a shot charge, an elongated cup-shaped container for said shot charge and extending into said shell to said cup leaving a portion of said container projecting from the shell, and a wad in the open end of said container

to hold the shot therein and to occupy a position adjacent the bottom of said cup.

10. In a cartridge, the combination with a shell, of a primer therefor, a charge of explosive in said shell adjacent said primer, a shot container having side portions extending past the shot to provide an air space in said cartridge, and an inverted sheet metal cup in said shell intermediate the ends thereof, said cup having cylindrical walls gradually tapering in cross-section toward the bottom of the shell.

11. A shot charge for cartridges, the combination with a charge of shot, of an elongated cup-shaped container of non-explosive material adapted to hold the charge intact and prevent the same from contacting with the gun barrel walls when discharged therefrom, said container permitting spreading of the charge after passage through the barrel, and a wad at the open end of said container for holding the charge in said container and adapted to occupy an intermediate position in a cartridge shell.

12. A loaded shot cartridge comprising a shell, an explosive charge in the base of said shell, a shallow inverted cup enclosed within said shell intermediate the ends thereof and above said explosive charge, and a shot charge comprising shot in an elongated container of non-explosive material, adapted to be inserted into the open end of said shell with the edges of said container engaging said cup.

13. A loaded shot cartridge comprising a shell open at one end and closed at the other, a charge of powder in said shell adjacent the closed end thereof, a charge of shot enclosed in a holder for insertion into the open end of said shell, and a cup enclosed within said shell with its walls disposed against the inner walls of said shell and its bottom engaging the edges of the walls of said holder.

14. A shot container for insertion into cartridge shells comprising a tubular member having an open end and a closed end, a wad disposed in said container below the edge of the opening at the end thereof to cause the walls of said tubular member to extend slightly apart from the exposed surface of said wad to provide an air space between said wad and the powder chamber of said cartridge, and a plurality of shot filling the space between said wad and the closed end of said tubular member.

15. A shot container for insertion into cartridge shells, comprising a tubular member having an open end and a closed end, and a wad for closing the open end of said tubular member, said wad being positioned relative to the end of said tubular member to provide an air space within said cartridge below said wad when said shot container is inserted into a cartridge shell.

16. A shot charge for cartridge shells, comprising a cylindrical container having a semi-spherical closed end, a plurality of shot filling said container, and a wad for closing the open end of said container and for holding the said shot therein, the outer surface of said wad being spaced from the bottom edges of said container to provide an air space when the said charge is inserted into a cartridge shell charged with explosive material.

In testimony whereof I have signed my name to this specification on this 12th day of July A. D. 1922.

CHARLES LE ROY HOLDEN.