UNITED STATES PATENT OFFICE.

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SELF-LUBRICATING BULLET AND SHOT.

No. 862,778. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed January 27, 1904. Serial No. 190,833.

To all whom it may concern:

Be it known that I, BERT L. WILLIAMS, a citizen of the United States, and residing in Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Self-Lubricating Bullets and Shot, of which the following is a specification.

My invention relates to self-lubricating bullets and shot.

Bullets are usually greased to facilitate their passage through the barrel of the fire-arm and to avoid leading the barrel. Originally, all bullets of fixed ammunition were greased on the outside of the bullet on the part projecting from the case or shell, and this practice still prevails with the smaller sizes of metallic ammunition, as sizes not exceeding .32 caliber and sometimes bullets of .45 and even .50 caliber are greased outside of the shell. In larger metallic ammunition the grease is sometimes placed on the part of the bullet within the shell, the bullet being grooved circumferentially to receive the grease. The use of grease as a lubricator is objectionable because dirt adheres to a greased bullet and gets into the barrel of the fire-arm and interferes with the accuracy of the shooting and requires the barrel to be cleaned frequently.

Many, perhaps most hunters carry their cartridges loose in their pockets where the cartridges accumulate lint and dirt. In the larger cartridges where the grease is within the shell this objection does not apply with so much force but the grease and powder, especially if "black powder" is used, foul the barrel and when these large shells are kept in a warm place or exposed to the sun the grease frequently melts and runs into the powder, spoiling or diminishing the effect of the charge, so that the effective force of long kept metallic ammunition of the larger sizes cannot be relied upon. The grease frequently becomes rancid and fails to lubricate the barrel properly. But under the most favorable conditions grease will not entirely prevent the leading of the barrel, and much difficulty is sometimes experienced in removing the lead from the barrel which in some cases can only be done by a gunsmith or at the gun-factory.

Of course, shot (small balls or pellets of which a number are combined in one charge) cannot be lubricated, and lead the barrel, especially where small charges and high velocities are used. The combination of burnt grease with the burnt black powder greatly increases the danger of pitting the barrel.

Many attempts have been made and much expense has been incurred to avoid the necessity of greasing bullets. I dispense with grease on the bullets, avoid leading the barrel, secure a better lubrication, a cleaner cartridge and especially in the case of small ammunition, a more reliable cartridge, by incorporating in the bullet-metal or material a very small quantity of mercury.

I prefer to use about eighty parts of lead to one of metallic mercury, first melting the lead and then pouring the mercury into the melted lead. If desired there may be added to the above some hardening material as about two parts of antimony or three of tin, more or less, according to the hardness desired and the amount of the charge and velocity to be attained by the bullets.

From the composition above described bullets of any usual shape are made in the usual manner. Such bullets will be sufficiently lubricated by the contained mercury, which imparts to them a slippery feeling and keeps them bright and clean, because lint and dirt will not adhere to them. Such bullets will not lead the barrel from which they are fired, because any lead which may be removed from the bullet by the corners of the rifling is not soldered to the barrel, but is loose therein and may be removed by drawing a clean rag through the barrel or by washing.

I claim as my invention:—

1. A self-lubricating projectile, consisting of lead with a minute quantity of mercury incorporated therein.

2. A self-lubricating projectile, consisting of lead with a minute quantity of mercury and a hardening substance.

In testimony whereof, I have affixed my signature, in presence of two witnesses.

BERT L. WILLIAMS.

Witnesses:
ALBERT M. MOORE,
ROSCOE MCDANIEL.