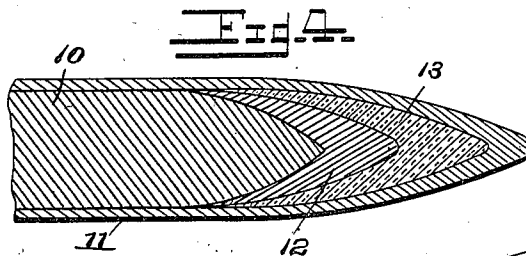
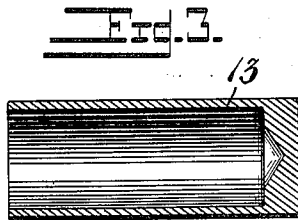
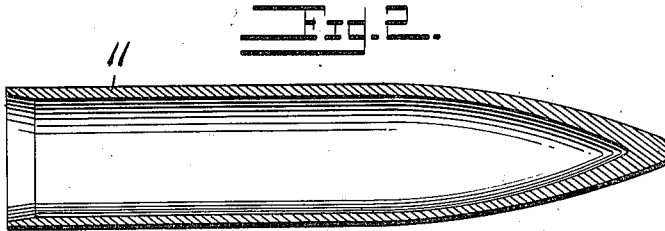
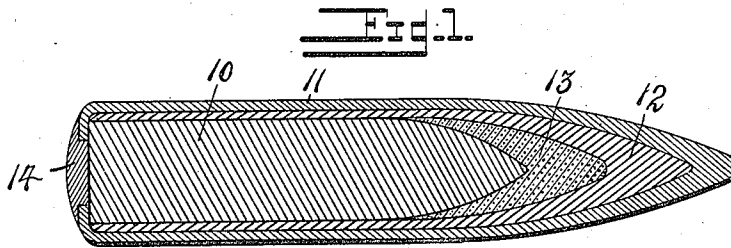


W. L. CLAY.
ARMOR PIERCING, SPOTLIGHT AND INCENDIARY BULLET.
APPLICATION FILED NOV. 20, 1918.

1,380,773.

Patented June 7, 1921.



Inventor

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UNITED STATES PATENT OFFICE.

WALLACE L. CLAY, OF THE UNITED STATES ARMY.

ARMOR-PIERCING, SPOTLIGHT, AND INCENDIARY BULLET.

1,380,773.

Specification of Letters Patent.

Patented June 7, 1921.

Application filed November 20, 1918. Serial No. 263,382.

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To all whom it may concern:

Be it known that I, WALLACE L. CLAY, Lt. Col. Ordnance Dept., U. S. A., a citizen of the United States, stationed at Frankford Arsenal, have invented an Improvement in Armor-Piercing, Spotlight, and Incendiary Bullets, of which the following is a specification.

The invention described herein may be used by the Government, or any of its officers or employees in prosecution of work for the Government, or by any other person in the United States, without payment of any royalty thereon.

This invention relates to combined armor piercing, spot light and incendiary bullets or projectiles, and has for one of its objects to produce a projectile including a slug capable of piercing armor or other resisting body, coating the armor adjacent to the aperture with a vapor or light producing substance, and producing a conflagration or explosion of the inflammable gas or other substance within the objective.

A combined tracer spot light and incendiary projectile is thus produced which may be employed for all of these purposes without interference one with the other.

With these and other objects in view the invention consists in certain new and useful improvements hereinafter described and specifically set forth in the claims, and in the drawings illustrative of the preferred embodiment of the invention—

Figure 1 is a longitudinal section of the projectile complete.

Fig. 2 is a detached longitudinal elevation of the shell or jacket.

Fig. 3 is a longitudinal section of the blank from which the lubricating member is produced.

Fig. 4 is a sectional detail illustrating a modification in the construction.

The improved projectile comprises a slug 10, of steel or other armor piercing metal, pointed at the forward end, and an inclosing shell 11 of a material which will be shattered by impact with a resisting object.

The slug 10 is retained in position by "crimping" the rear edge of the shell over the slug as shown in Fig. 1, and extends through the major portion of the shell leaving a space within the shell in advance of the slug.

The shell 11 may be of any suitable metal

or metallic compound such as cupro-nickel, gilding metal, cupro-nickel steel, or the like, which will shatter on impact with a resisting object.

Disposed within the shell and between its sides and the slug is a mass 12 of soft metal such as lead, a compound of lead and antimony, or lead and tin, or the like which forms a "lubricant" for the slug.

Disposed within the space between the slug 10 and the "lubricant" material 12 is a mass of vapor and light producing substance such as phosphorus, indicated at 13.

At its rear end the crimped in portion of the shell is provided with a cap 14 or guard of solder or the like, to prevent the force of the powder charge of the fire arm from driving the slug through the shell before the latter reaches its objective.

The action of the projectile is as follows: Upon impact with an armor plate or other hard resisting material, a flash is produced when fired at night or a cloud of vapor when fired in the daytime, indicating to the man firing the rifle that he has made a hit on the object fired at. At the same time the steel slug passes on through the armor plate, being lubricated by the alloy around it.

The steel slug passes through the charge of phosphorus and carries part of the phosphorus with it and also coats the surface of the armor plate at the point of impact and coats the interior of the hole made by its passing through the armor plate with the phosphorus, which burns on contact with the air. Also, part of the charge is carried on to the rear of the armor plate, which in many cases may be a gasoline tank, thus causing explosion of the same.

The device can be manufactured in any required size to fit any size of gun. The positions of lubricating and conflagration producing elements may be transposed, as shown in Fig. 4, or with the element 13 in advance of the element 12, if found advantageous.

Having thus described the invention what is claimed as new and desired to secure by Letters Patent is:

1. A projectile of the class described, comprising a slug, a shell of a material fractureable by impact and inclosing the slug, a mass of relatively soft metallic substance between the slug and shell, and a mass of a light and vapor producing substance be-

tween the slug and the soft metallic substance.

2. A projectile of the class described, comprising a slug pointed at the forward end, a shell of a material fracturable by impact and inclosing the slug and pointed at the forward end, a mass of relatively soft metallic substance between the slug and shell, the major portion of the metallic element being located within the nose of the shell, and a mass of a light and vapor producing substance between the pointed end of the slug and the forward portion of the soft metallic substance.
3. A projectile of the class described, comprising a slug, a shell of a material fracturable by impact and inclosing the slug, a mass of relatively soft metallic substance between the slug and shell, a mass of a light and vapor producing substance between the slug and the soft metallic substance, and means for holding the shell upon the slug.

4. A projectile of the class described, comprising a slug, a shell of a material fracturable by impact and inclosing a slug, a mass of relatively soft metallic substance between the slug and shell, and a mass of a light and vapor producing substance between the slug and the soft metallic substance, the rear end of the shell being directed over the rear end of the slug to hold the same in position.

5. A projectile of the class described, comprising a slug, a shell of a material fracturable by impact and inclosing the slug, a mass of relatively soft metallic substance between the slug and shell, a mass of a light and vapor producing substance between the slug and the soft metallic substance, the rear end of the shell being directed over the rear end of the slug to hold the same in position, and a cap of relatively soft material attached to the rear end of the shell and slug.

WALLACE L. CLAY.