

April 4, 1944.

W. T. MOORE

2,345,619

PROJECTILE

Filed June 27, 1941

Fig. 1.

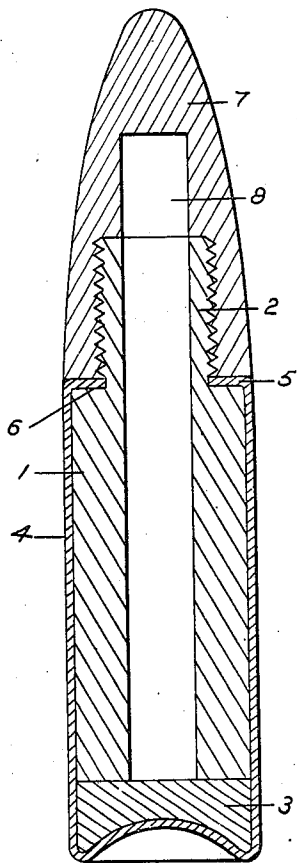
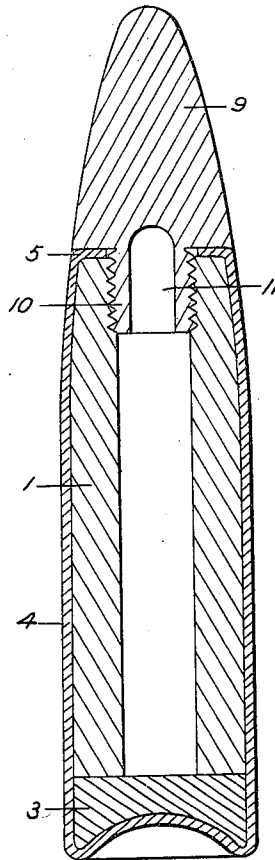


Fig. 2.



Inventor
Wiley T. Moore

By *J. H. Church*
Attorneys

UNITED STATES PATENT OFFICE

2,345,619

PROJECTILE

Wiley T. Moore, United States Army,
Laverne, Okla.

Application June 27, 1941, Serial No. 400,042

3 Claims. (Cl. 102—92.5)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to explosive or incendiary projectiles.

In the explosive and incendiary projectiles previously known and used assembly and loading was often difficult and dangerous owing to the necessity of performing certain assembly operations with sensitive priming charges in place.

It is an object of this invention to simplify the manufacture and assembly of explosive and incendiary projectiles.

It is a further object of this invention to provide a form of projectile which may be safely loaded and handled without reducing the sensitivity of the charge therein.

It is a further object of this invention to provide a projectile having an arrangement of parts whereby the nose cap may be formed of plastics.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawing in which:

Figure 1 is a longitudinal cross section of a projectile embodying my invention.

Figure 2 is a longitudinal cross section of a modified form of my invention.

Referring to the drawing by characters of reference, Figure 1 shows a projectile comprising a hollow core 1 which may conveniently be formed of steel tubing. An end 2 of the core is reduced in diameter and provided with external screw threads. A base filler 3 of lead or other suitable material is provided at the base of the core 1 and with the core is enclosed in a jacket 4 of gilding metal or the like. The brim of the jacket is crimped or otherwise turned in to form a flange 5 opposing the shoulder 6 formed by the reduced portion of the core. An ogival nose cap 7 formed of a suitable plastic material or of metal is provided with internal screw threads adapted to engage the threaded portion 2 of the hollow core and with an internal bore 8 in alignment with the interior of the hollow core when the nose cap is engaging the threads. This type of construction has several notable advantages in that the main charge may be separately loaded without the presence of a dangerously sensitive priming charge. Similarly the nose caps may be specially loaded with any desired type of primer charge. Separate loading in this manner insures that any accidental explosion which might occur in load-

ing the primers will not be communicated to the main charges with possible loss of life. The nose caps may be assembled to the body portions at any desired time after loading. When the projectile is completely assembled the flange 5 formed by the brim of the jacket is secured between the rear face of the nose cap and the front face of the core insuring that rotating forces applied to the jacket will be communicated to the core. Preferably the nose cap is made of such a length as to extend back to the forward limit of the portion of the projectile which is engaged by the rifling of the gun securing maximum economy of jacket material.

In the modification of my invention shown in Figure 2 the core 1 is internally threaded at its nose portion. A base filler 3 is provided as in Figure 1 and the jacket 4 is slipped over the filler and core body and has its brim formed into an inwardly extending flange 5 opposing the front end of the core. An ogival nose cap 9 formed of a suitable plastic material or of metal is provided with a rear portion of reduced diameter 10 having external threads adapted to cooperate with those formed in the core body. A chamber 11 is formed in the nose cap which may be loaded with a suitable primer. This modification may be loaded in a similar manner to the modification shown in Figure 1 and in practice will have the same advantages.

The discovery that plastics of the synthetic resin type are suitable for use as projectile parts presents several advantages not heretofore achieved in practice. For some applications it may be necessary to use fillers of vegetable or mineral fiber to add strength to the plastic compound. It has been discovered that a projectile nose may be formed from plastics which will have ample strength to resist the forces of setback on firing and of centrifugal action during flight. Priming materials are notably sensitive to heat, shock, and vibration all of which are readily transmitted through metallic nose caps. Plastics of suitable strength have been found to be excellent insulators for protecting the priming charge from the heat and shocks incident to firing. The lower specific gravity of plastics enables the bulk of the weight of the projectile to be concentrated about the explosive charge for more effective fragmentation without exerting a deleterious effect upon the form factor or stability of the projectile. Further, the use of plastics permits of die-forming with consequent improvements in the cost of production and uniformity of the finished product.

I claim:

1. A projectile comprising a cup-shaped jacket, a filler plate in the base of said jacket, a tubular body portion in said jacket, said body portion having a section of reduced diameter near its front end forming a forwardly facing shoulder, an inwardly extending flange formed in the front end of said jacket in opposition to said shoulder to retain the core in said jacket in contact with said base filler, and a chambered ogival nose cap threadably engaging the portion of reduced diameter and having a shoulder overlying the said flange.

2. A projectile comprising a cup-shaped jacket, a filler in the base of said jacket, a tubular body portion in said jacket having its rear end in contact with said filler and having its forward end

internally threaded, the front end of said jacket being formed into an inwardly extending flange opposing the forward face of said body portion, and a chambered, ogival nose cap threadably engaging the body portion and having a rearwardly facing shoulder overlying the said flange.

3. A projectile comprising a cup-shaped jacket, a filler in the base of said jacket, a tubular body portion in said jacket having its rear end in contact with said filler, the front end of said jacket being formed into an inwardly extending flange opposing the forward face of said body portion, and a chambered ogival nose cap engaging the body portion and having a rearwardly facing shoulder overlying the said flange.

WILEY T. MOORE.