

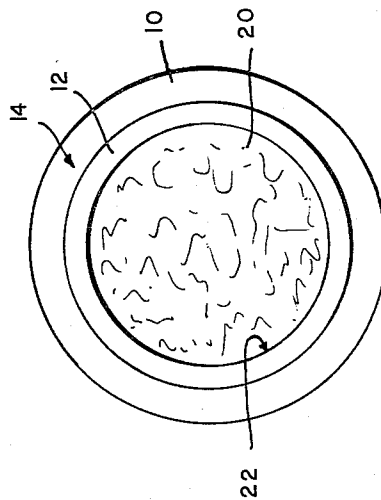
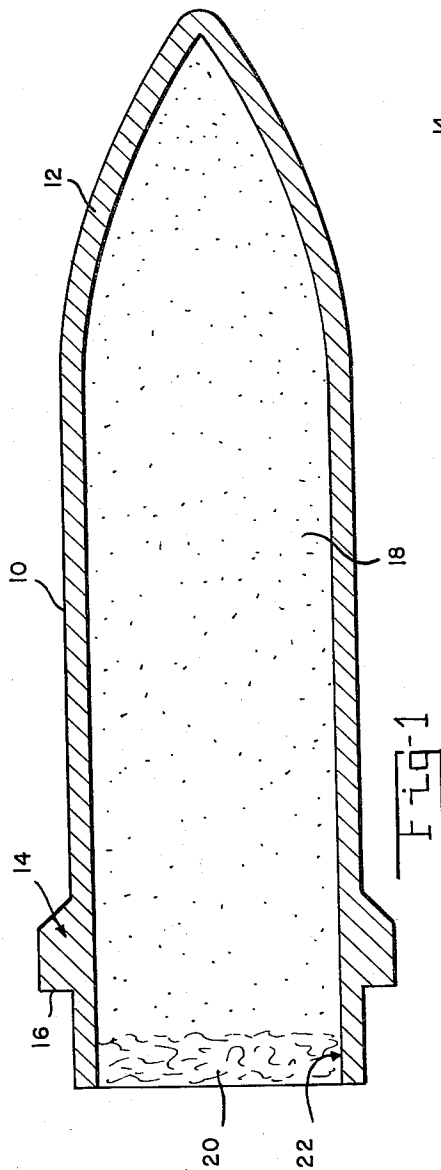
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R. M. FERGUSON

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DISINTEGRATING AMMUNITION FOR MACHINE GUN AND CANNON

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INVENTOR.
RALPH M. FERGUSON

BY

Walter L. Cooney
Charles H. Wagner
ATTORNEYS

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2,991,718

DISINTEGRATING AMMUNITION FOR MACHINE GUN AND CANNON

Ralph M. Ferguson, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

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3 Claims. (Cl. 102-91)

(Granted under Title 35, U.S. Code (1952), sec. 266)

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

This invention relates to disintegrating ammunition for testing fire control systems and more particularly to the construction of the bullet or slug.

An object of the present invention is to eliminate the necessity for constructing expensive firing butts, wide angle and all angle ranges in order to test fire control systems at both manufacturers plants and military installations.

A further object of the present invention is to provide disintegrating ammunition for testing machine guns, cannons and accessories thereto such as solenoids, boosters, heaters and chargers without the cost of construction of expensive testing ranges. It is a still further object of the invention to provide disintegrating ammunition that, when fired, will produce identical forces on the structure of the aircraft, gun mounts and other parts of the mounting structure as standard ball or test type ammunition.

According to the present invention the bullet or slug comprises a thin substantially conically shaped outer shell, weighting means within said outer shell to provide accurate weight for said slug, and means closing the open end of said outer shell to prevent discharge of the weighting means.

These and other objects and features of the present invention are described below in connection with the accompanying drawings.

In the drawings:

FIG. 1 is a sectional view of the bullet or slug of the present invention;

FIG. 2 is an end view of the bullet or slug of the present invention.

Referring now in detail to the drawings wherein like reference numerals designate like parts and more particularly to FIG. 1 there is shown the bullet or slug of the present invention generally designated 10 having a thin outer shell 12 of approximately $\frac{3}{4}$ of an inch in thickness. A driving band 14 is formed integral with said thin outer shell near the trailing end of the slug, said driving band 14 has a shoulder 16 positioned to abut the front edge of the charge containing cartridge casing (not shown).

The thin outer shell 12 of the slug is filled with loose material 18 which may be any of a number of weighting materials such as powdered lead, lead shot or lead fragments. The loose material 18 is retained within the thin

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outer shell 12 by means of paper wadding 20 which is inserted into the open end 22 of the shell 12.

In operation, the preferred embodiment of the present invention will comprise a thin outer shell 12, $\frac{3}{4}$ of an inch thick, and constructed in the form of a casted alloy shell consisting of 50% bismuth, 25% lead, 12½% tin and 12½% cadmium, by weight, which will have a melting point of approximately 149° F. When the slug 10 is fired the heat of the exploding charge and barrel friction will cause the thin outer shell 12 to be heated to a temperature near its melting point thus reducing the outer shell 12 to a putty-like consistency. As the slug 10 leaves the gun barrel it will be subjected to approximately 600 p.s.i. of pressure and air friction which will complete the destruction of the thin outer shell 12, thus permitting the powdered lead or other weight-producing material 18 along with the paper wadding 20 to be scattered over a relatively small area near the barrel of the weapon.

The weight-producing material 18 is necessary to the proper functioning of the test ammunition since the weight of the test ammunition must be the same as an actual round to produce identical recoil and shock characteristics on the weapon being fired.

The present invention has been described in detail above for the purpose of illustration only and is not intended to be limited by this description or otherwise except as defined in the appended claims.

I claim:

1. A disintegrating projectile of the type described comprising a thin outer metal shell, said metal shell being a cast alloy of 50% bismuth, 25% lead, 12½% tin and 12½% cadmium, by weight, approximately $\frac{3}{4}$ of an inch thick, powdered lead disposed within said thin metal shell to approximate the weight of a standard projectile, and means sealing said powdered lead within said thin outer metal shell.

2. A disintegrating projectile according to claim 1 wherein said sealing means consists of paper wadding.

3. A disintegrating projectile of the type described comprising a bullet-shaped thin outer metal shell approximately $\frac{3}{4}$ of an inch thick, said metal shell being a cast alloy of 50% bismuth, 25% lead, 12½% tin and 12½% cadmium by weight, and means contained within said thin metal shell to approximate the weight of standard round.

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