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PROJECTILE FOR SIMULATING FIRING OF AUTOMATIC WEAPONS

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FIG. 1

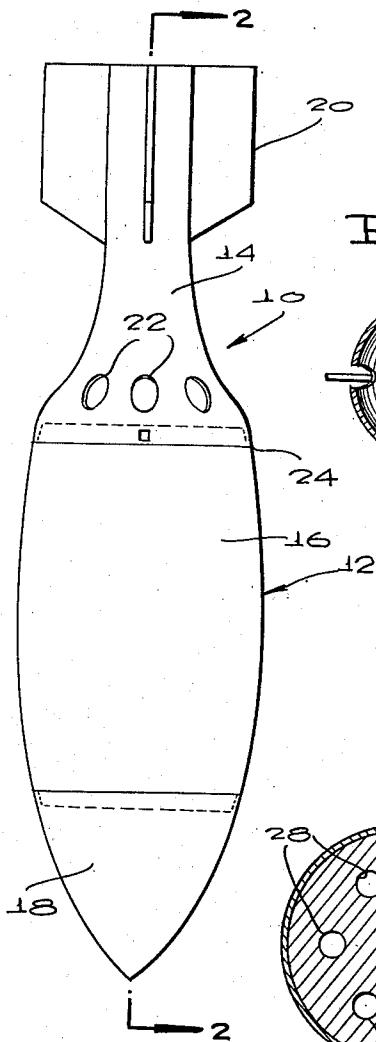


FIG. 2

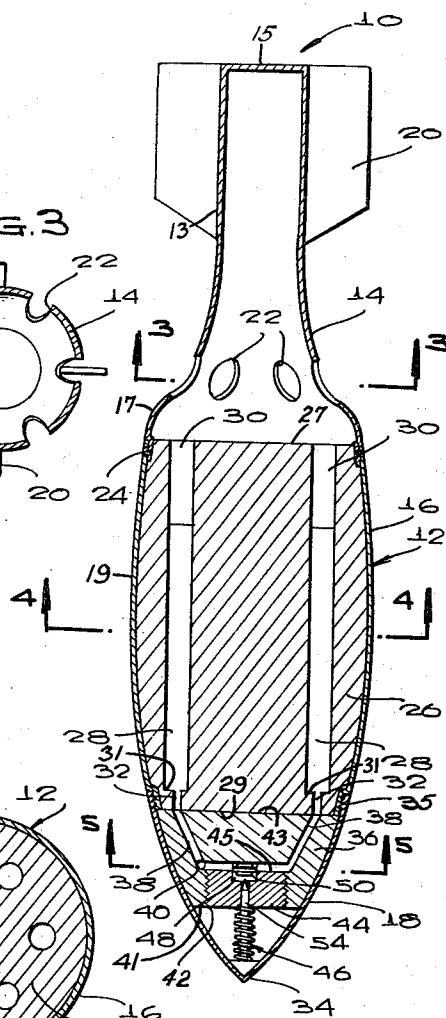


FIG. 3

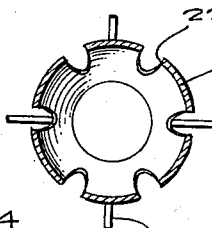


FIG. 5

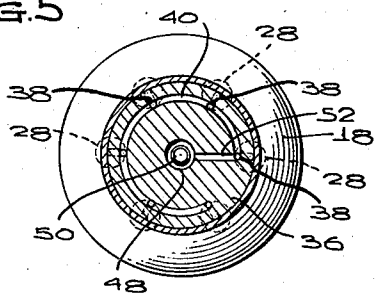


FIG. 4

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PROJECTILE FOR SIMULATING FIRING OF AUTOMATIC WEAPONS

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3 Claims. (Cl. 102—7.6)

This invention relates generally to improvements in projectiles, and is more particularly concerned with a projectile for firing from mortars and the like, to simulate discharge of automatic firing arms at points other than those occupied by troops on maneuvers in order to create diversion for opposing troops.

During infantry maneuvers, for example, it is common procedure to feint and attack from a direction other than that from which an attack is to be launched. In order to feint attacks in close contact fighting, it is necessary to utilize for this purpose troops which are not engaged in an actual attack, so that firing power of the troops utilized in making a "feint" attack cannot be employed.

A primary object of the invention is to provide a projectile for simulating the firing of automatic weapons, and adapted to be projected by a mortar or a rocket launcher, the projectile incorporating a plurality of explosive charges which are successively detonated upon impact of the projectile with a target, so as to simulate the firing of automatic weapons at a place other than that from which an attack by maneuvering troops is or is about to be made.

Another object of the invention is to provide, in a projectile of this kind, a core having a plurality of independent chambers containing explosive charges, fuse means successively communicating with the chambers for successively firing the charges therein, and impact-responsive detonating means for detonating the fuse means.

A further object of the invention is to provide an efficient and practical projectile of the character indicated which can be made in rugged and serviceable forms at relatively low cost, is easily used, and is highly satisfactory for the purpose intended.

These together with other objects and advantages which will become apparent reside in the details of construction and operation as more fully hereinafter is described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout the several views, and in which:

Figure 1 is an elevational view of a projectile of the invention;

Figure 2 is a longitudinal section taken substantially on the plane of line 2—2 of Figure 1;

Figure 3 is a transverse section taken substantially on the plane of line 3—3 of Figure 2;

Figure 4 is a transverse section taken substantially on the plane of line 4—4 of Figure 2; and

Figure 5 is a transverse section taken substantially on the plane of line 5—5 of Figure 2.

Referring to the drawings, in detail, the illustrated projectile, indicated generally at 10, comprises a sectional casing 12, of any suitable material, composed of a tail section 14, a body section 16, and a nose section 18. As seen in Figure 2, the tail section 14 comprises an elongated tubular rear portion 13 having a closed rear end 15, the forward end of the portion 13 flaring into

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a substantially hemispherical portion 17 having an open forward end. On the portion 13 are radial fins 20. At the juncture of the portion 13 with the enlarged portion 17 are circumferentially spaced holes 22.

The body section 16 of the casing 12 is longer than the tail section 14 and its side wall 19 is slightly convex or bellied and is at its middle slightly larger in diameter than the enlarged portion 17 of the tail section 14. The forward end of the tail section 14 has thereon an inset flange 24 which is suitably secured within the rear end of the body section 16.

Conforming to the interior of the body section 16 is a solid core 26 which has squared rear and forward ends 27 and 29 which coincide with the rear and forward ends of the body section 16. The core 26 has therein a plurality of straight and relatively small diameter bores 28, which are located close to the sides of the core and are in circumferentially spaced relation to each other and the core 26. The bores 28 open through the rear end 27 of the core at 30 and terminate, as indicated at 31, in spaced relation to the forward end 29 of the core, whereat the bores communicate with relatively small diameter restricted passages 32 which open through the forward end 29 of the core. The core 26 can be of frangible material if a fragmentary shrapnel effect on detonation of the projectile is desired.

The nose section 18 of the projectile 10 is conical and terminates in a pointed forward end 34 and has an open rear end which can be threadedly engaged with an inset portion of the forward end of the body section 16, as indicated at 35. Conformably contained within the nose section 18 is a fuse body 36 having therein a plurality of forwardly converging small diameter bores 38 which are registered at their rear ends with the forward ends of the passages 32 of the core 26. The bores 38 are to contain fuse material. The forward ends of the bores 38 communicate with an interrupted circular groove 40, see Figure 5, also to contain fuse material.

The groove 40 is axially spaced from the forward end 41 of the fuse body 36, while the rear end 43 of the fuse body 36 abuts the forward end 29 of the core 26, and the forward end 41 of the fuse body 36 is axially spaced from the forward end 34 of the nose section 18. The fuse body 36 has in its forward end 41 an axial threaded opening 42 of substantially the diameter of the groove 40, and threaded in the opening 42 is a plug 44 of an impact-type detonator assembly, indicated generally at 46. The plug 44 has in its rear end 45 an axial recess 48, smaller in diameter than the groove 40, in which is seated a suitable detonator 50. The igniting groove 40 has, as shown in Figure 5, a radial portion 52 at one end thereof which leads into the recess 48.

A spring-retracted firing pin 54 axially traverses the plug 44 and has a rear end facing and normally spaced from the detonator 50. When the nose section 18 of the projectile 10 strikes an obstruction, such as the ground, while in flight, the nose section 18 telescopes and drives the firing pin 54 rearwardly so as to detonate the detonator 50 and ignite the fuse material in the groove 40 from one end thereof, so as to successively ignite the material in the bores 38, the bores 32 and in the bores 28 of the core 26. The resultant gases escape through the holes 22 in the tail section 14. Since the fuse containing groove 40 is in communication with the detonator recess 48 only at one end of the groove, ignition of the fuse material in the groove is progressive toward the other end of the groove, so that the explosive material in the bores 38, the passages 32, and the bores 28 is successive, so that the regular sounds of automatic arms fire are simulated.

The foregoing is considered to be illustrative only of the principles of the invention. Since numerous modi-

fications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, as fall within the scope of the appended claims.

What is claimed as new is as follows:

1. A projectile comprising an elongated casing composed of a tail section, a body section, and a nose section, said tail section having a tubular rear portion having a closed rear end and an enlarged forward portion on said rear portion having an open forward end, said body section having a forward end and a rear end, the forward end of the tail section being secured to the rear end of the body section, said nose section being conical and having a forward end and an open rear end secured to the forward end of the body section, said tail section having circumferentially spaced holes at the juncture of said rear portion and said enlarged portion of the tail section, a single solid core conformably fitting and fixed in said body section, said core having forward and rear ends terminating substantially at related ends of the body section, said core having therein a plurality of longitudinal bores extending through the ends thereof, said bores being circumferentially spaced from each other, a fuse body conformably engaged in said nose section, said fuse body having a rear end abutting the forward end of said core and a forward end spaced from the forward end of the nose section, said fuse body having an axial socket in its forward end having an open rear end, an interrupted circular fuse groove in the rear end

of the socket, restricted bores in said fuse body having rear ends communicating with the bores of the core at the forward end of the core and forward ends communicating with said fuse groove at different points around said groove, and a detonator assembly in said socket.

2. A projectile according to claim 1, wherein said groove is centered with respect to the core bores and said restricted bores in the fuse body are smaller in diameter than the core bores and converge forwardly to said groove.

3. A projectile according to claim 1, wherein said detonator assembly comprises a plug secured in said socket, said plug having a rear end having therein a central recess smaller in diameter than and centered with respect to said groove, one end of said groove being closed and other end of the groove having a radial portion leading into said recess, a detonator in said recess, and an impact-responsive spring retracted firing pin axially traversing said plug and having a rear end in said recess facing said detonator.

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