ABSTRACT: A method and apparatus for forming a flat cloud of BW/CW agent and simultaneously a superposed flat cloud of fuel air. The fuel air cloud is then detonated.
METHOD OF DESPERSING BW/CW OR OTHER MATERIALS

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

This invention relates to Biological-Chemical (BW/CW) and more particularly to improvements in dispersing the BW/CW agent.

In the dispersal of BW/CW agents it is known practice to detonate a canister containing the agent at or near the ground, which forms a cloud of particles of various sizes which contact ground targets, such as personnel. Such type of weapon has only a limited area of dispersion and may be rendered ineffective if the personnel are protected by tarpsaulins, "soft" buildings, or other fragile or porous coverings.

It is also well known to disperse a fuel in similar manner to form a cloud of fuel-air particles (FAX) and detonate the cloud after it has been formed. The resulting detonation then produces overpressure and shock waves which may destroy the intended target by such effects.

The present invention, briefly, combines the BW/CW and FAX effects to provide a dual purpose weapon in which the FAX effect is superimposed on the BW/CW effect.

One of the objects of the invention is to provide method and apparatus for destroying or opening up flammable protective covers by a FAX detonation and utilizing such detonation to disperse a BW/CW agent into or through such covers.

Another object is to disperse the BW/CW agent over larger areas than was heretofore possible in the absence of the FAX effect.

Still further objects, advantages and salient features will become apparent from the description to follow, the appended claims, and the accompanying drawing in which:

FIG. 1 illustrates the initial step in the formation of a BW/CW cloud and a superimposed FAX cloud.

FIG. 2 illustrates the effects of detonation of the FAX cloud a short interval later, and

FIG. 3 is a cross section of a canister for delivering the materials for forming the clouds of FIG. 1.

Referring first to FIG. 3, canister 10 for forming the clouds referred to, comprises a metallic tubular casing 12, closed at opposite ends by walls 14, 16 and having a partition wall 18, near its lower end, forming compartments 20, 22, the various parts being secured together, such as by welding. A burster tube 24, welded at one end to wall 14 extends substantially to the bottom of compartment 22 and contains a high explosive 26, such as tetryl, which may be initiated by any type of fuse, such as a proximity fuse 28.

Compartment 20 contains the BW/CW agent and compartment 22 the fuel such as ethylene oxide, these being introduced through suitable pipe fittings 29, 30 which are then plugged. A relatively small ullage space in each compartment 55 is preferred. The circumferential wall of the upper compartment may be scored longitudinally and circumferentially to provide weakened zones to permit uniform rupture of same and the circumferential wall of the lower compartment may be similarly scored and thinned in thickness to ensure that both walls simultaneously rupture upon detonation of the burster charge.

In operation, the canister is delivered to a point above the target by dropping from aircraft or by mortar with its longitudi-