May 11, 1943. A. F. W. HELMBOLD 2,318,994

BOMB

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Fig. 1.

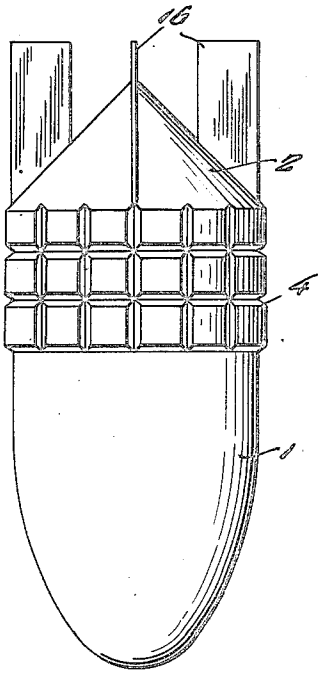


Fig. 2.

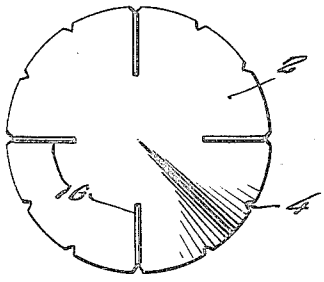
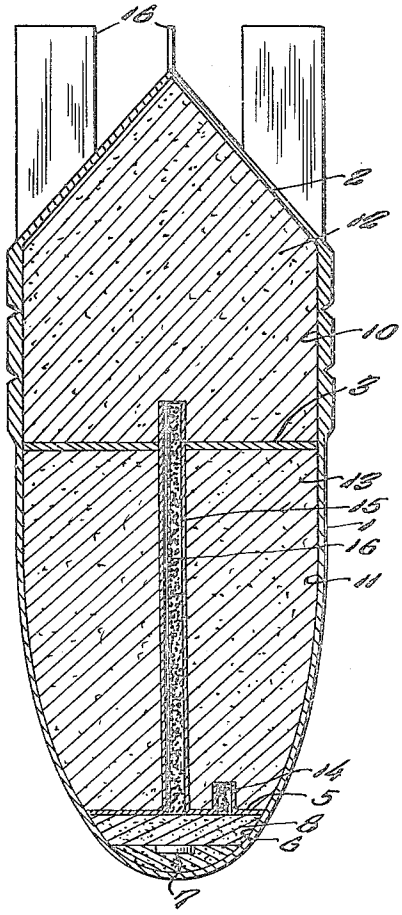


Fig. 3.



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2 Claims. (Cl. 102—6)

My invention relates to improvements in bombs, the principal object in view being to provide a combination incendiary and demolition bomb adapted to function so that it is conditioned through impact with a target for incendiary operation, and for subsequent explosion to both increase its effectiveness as an incendiary instrument and to cause it to function as shrapnel.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvement, will be readily understood when the succeeding description and claims are read with reference to the drawing accompanying and forming a part of this specification.

In said drawing:

Figure 1 is a view in side elevation of the preferred embodiment of my invention,

Figure 2 is a view in rear elevation, and

Figure 3 is a view in longitudinal section drawn to an enlarged scale.

Referring to the drawing by numerals, my improved bomb comprises a substantially bullet-shaped shell 1 of magnesium metal, or iron, or other suitable metal, having a conical butt end 2, a substantially central transverse partition 3, also of metal, the wall of the casing intermediate the partition 3 and the end 2 being grooved longitudinally and circumferentially, as at 4, to provide a frangible portion designed when the shell bursts to function as shrapnel.

Adjacent the nose of the shell 1 is a second transverse partition 5 of suitable metal forming together with the nose portion a chamber 6 adapted to contain a detonating cap 7 and behind the cap a fuse composition 8. As will be seen the partition 3 divides the shell between the front end 2 and the partition 5 into a rear chamber 10 and an intermediate chamber 11.

The chamber 10 is filled with a high explosive such as Trinitrotoluene, or the like, represented at 12. The chamber 11 is packed with Thermit, represented at 13, and other substance adapted to readily give up oxygen when ignited.

Extending from the partition 5 into the chamber 11, for a short distance, in laterally offset position relative to the axis of the shell 1 is a short nipple 14 establishing communication between said chamber and the front end of the chamber 11. A tubular core 15 extends from the partition 5 axially of the shell 1 through the chamber 11 and partition 3 into the front portion of the rear chamber 10 and establishes communication between the chambers 6 and 10. A suitable time fuse 16 extends through said core 15.

A plurality of rectangular, flat, fins 16 extend from the marginal edge of the end 2 of said shell 1 rearwardly and which are grouped in a circle in equidistantly spaced relation, the function, as will be understood, of the fins being to maintain the bomb in upright position during flight of the same downwardly as when dropped from an airplane.

In operation, when the described bomb strikes a target, the cap 7 is exploded thereby igniting the fuse material 8 which, in turn, through the nipple 14, ignites the Thermit after a short interval sufficient for the bomb to come to rest, and also the time fuse 16. The latter is designed for delayed burning for a period of time sufficient to permit the Thermit to attain a high temperature such that it will set fire to, or explode, any inflammable, or explosive, target. As soon as the time fuse 16 burns to the explosive 12, the bomb bursts spreading the burning Thermit over a wide area and projecting the fragments of the bomb particularly of the frangible portion to act as shrapnel.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the subjoined claims.

What I claim is:

1. In a device of the class described, a shell of metal and substantially bullet-shaped, and having a leading nose end, a transverse partition in the shell adjacent the nose and forming in the latter a chamber, a second transverse partition in said shell intermediate the first mentioned partition and the other end of the shell and forming in said shell an intermediate chamber and rear chamber, respectively, a detonating cap and fuse material in the first mentioned chamber, a high explosive in the rear chamber, an inflammable material in the intermediate chamber, a short nipple extending through the first mentioned partition into the intermediate chamber through which the fuse material is adapted to ignite the inflammable material, a delayed action fuse extending from the first mentioned chamber into the end chamber and isolating means surrounding the delayed action fuse to isolate said delayed action fuse from the inflammable material whereby the fuse material is

adapted to ignite the delayed action fuse and the latter to cause explosion of the explosive material.

2. In a device of the class described, a shell of metal and substantially bullet-shaped, and having a leading nose end, a transverse partition in the shell adjacent the nose and forming in the latter a chamber, a second transverse partition in said shell intermediate the first mentioned partition and the other end of the shell and forming in said shell an intermediate chamber and rear chamber, respectively, a detonating cap and fuse material in the first mentioned chamber, a high explosive in the rear chamber, an inflammable material in the intermediate chamber, a short nipple extending through the first mentioned partition into the intermediate chamber through which the fuse material is adapted to ignite the inflammable material, a delayed action fuse extending from the first mentioned chamber into the end chamber and isolating means surrounding the delayed action fuse to isolate said delayed action fuse from the inflammable material whereby the fuse material is adapted to ignite the delayed action fuse and the latter to cause explosion of the explosive material, said shell embodying around the end chamber a circumferential frangible portion.

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