

[54] EXPLOSIVE LEAD PLUG

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[51] Int. Cl. F42b 3/10

[58] Field of Search 102/27, 70

[56] References Cited

UNITED STATES PATENTS

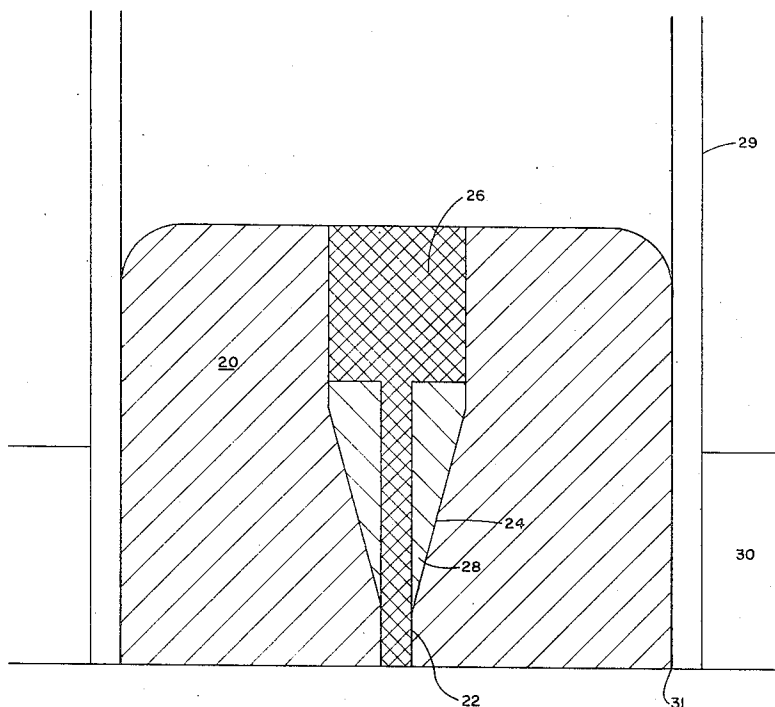
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[57] ABSTRACT

A metal fuze extension with an explosive-filled channel passing through it. The channel is small on one end and large on the other end with a conical section in the middle. A small conical insert fits into the conical portion of the channel. An opening extends from one end of the insert to the other allowing communication between the large and small ends of the channel. The large end of the channel is filled with an explosive charge. In the intended use of the extension, it is so positioned that the end containing the large diameter channel extends through the plate (usually steel) which forms the end of the canister. A detonation wave from a fuze located at the small end of the channel passes through the opening in the conical insert and causes detonation of the explosive material in the large end of the channel. The insert is then forced into the smaller end of the channel closing the smaller end of the channel and also the opening in the insert and the end of the plug is expanded so that the plug assumes the external configuration of a bottle stopper, preventing its ejection from the burster tube.

1 Claim, 2 Drawing Figures



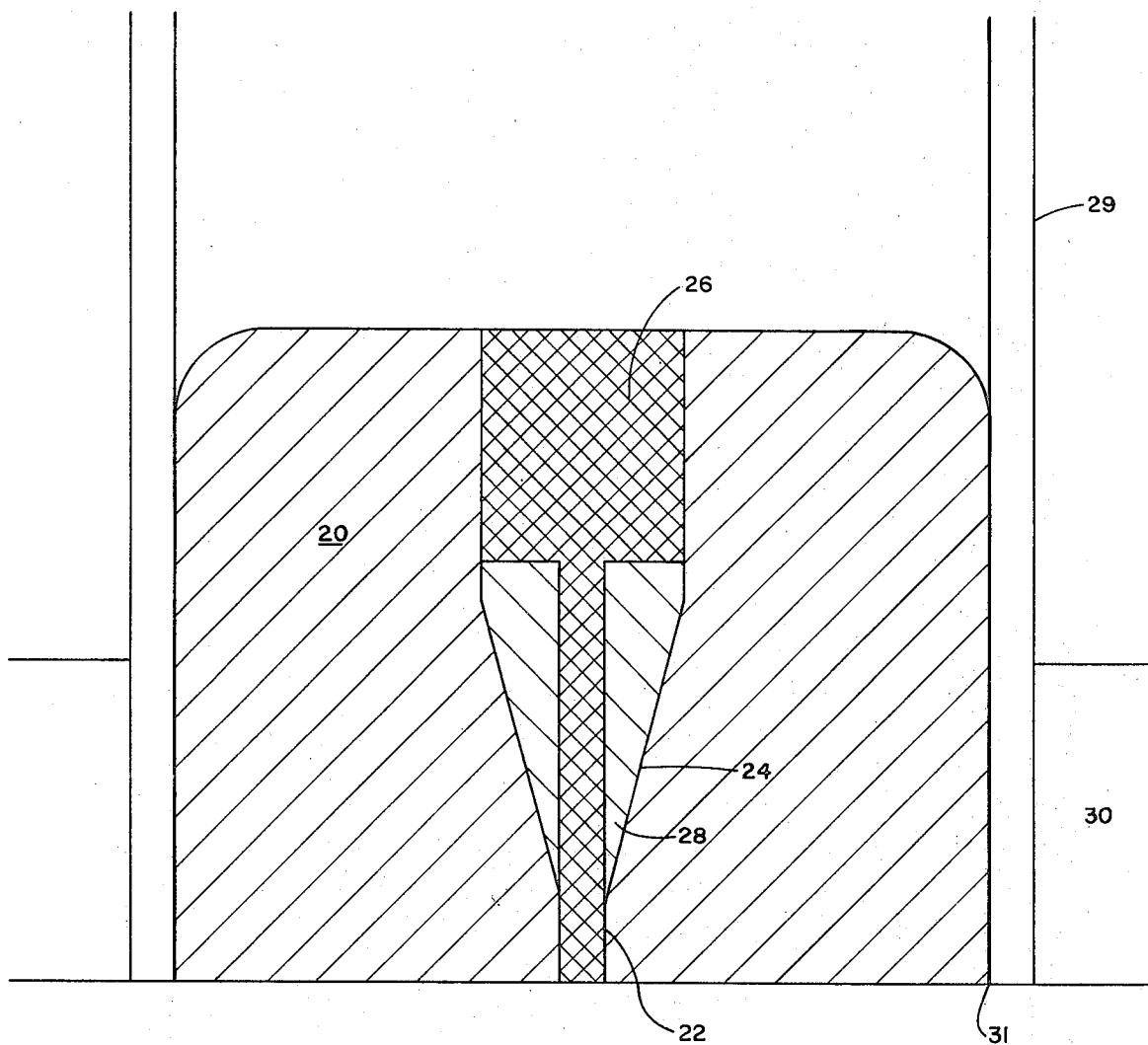


Fig. 1

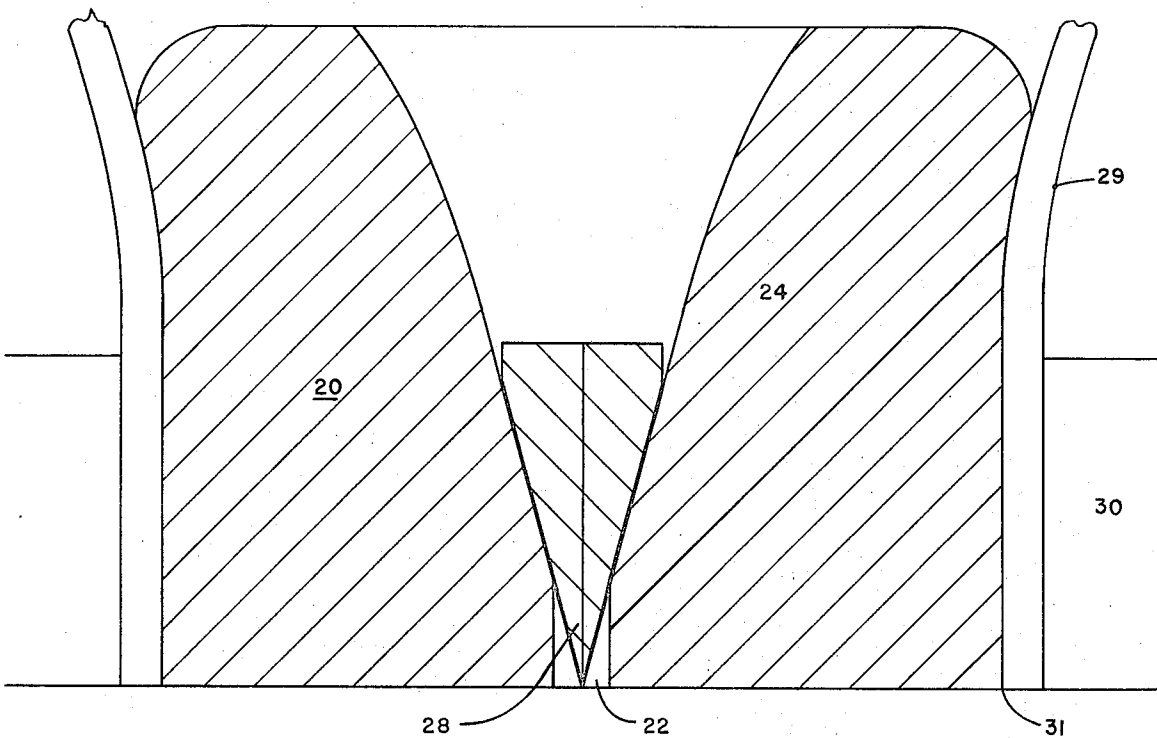


Fig. 2

EXPLOSIVE LEAD PLUG**BACKGROUND OF THE INVENTION**

This invention pertains to one-way fuze extension means.

It is common practice to drop from aircraft, canisters of fuel which are dispersed and detonated adjacent the ground by an explosive device. Intended targets may be personnel, parked aircraft, vehicles, buildings and mined areas. A device of this type, sometimes referred to as a FAE (fuel-air explosive) canister, is disclosed in copending U. S. Patent application by William A. Gey, Ser. No. 173,077, filed Feb. 13, 1962, and now abandoned. In said application a central burster tube is employed to disperse the surrounding liquid fuel contained within the canister.

It is desired that the liquid fuel disperse into a large fuel-air cloud, i.e., a cloud formed of a mixture of fuel and air, of a "pancake" configuration. For optimum results, it is essential that a proper fuel-air mixture result prior to detonation.

Problems have resulted where the central burster tube backfires, causing a premature detonation or a burning of the fuel.

The present invention prevents backfire of the central burster tube by forming an extension of the fuse used to detonate the central burster tube. After the ignition passes from the fuze, through the extension and into the burster tube, the extension seals itself at the fuze end by jamming the conical insert into the small end of the channel, and expands so that it cannot be ejected, thus preventing a backfire.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows an elevation view of the invention in cross section prior to detonation; and

FIG. 2 shows an elevation view of the invention in cross section after detonation.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows a bronze or steel fuze extension 20 with channel 24 extending through the center thereof. Channel 24 is seen to be of larger diameter on one end with the portion of the channel being conically shaped

narrowing down to a smaller end of the channel. The larger end of the channel is filled with explosive material 26. Conical insert 28 is located in the conical portion of channel 24. An opening through insert 28 allows communication between the large and small end of channel 24.

When a detonation wave passes through the small end 22 of channel 24 and through the opening in insert 28, explosive material 26 allows the detonation wave to continue and also causes insert 28 to be forced into opening 22 as shown in FIG. 2 thereby preventing a backfire through channel 24 and expands the fuze extension 20, preventing its ejection from the central tube 29 the end of which is constrained from expansion by the end of the canister 30 and seals the annular opening 31 preventing backfires through this opening or through the central tube 29.

What is claimed is:

1. In an explosive device including a burster charge and a fuze, fuze extension means situated between and contiguous said charge and said fuze;

said extension means comprising:

a tubular body of flowable metal having a channel extending therethrough and communicating said charge with said fuze;

a portion of said channel near the middle of said channel being conical;

the larger end of said channel being in contact with with charge;

the smaller end of said channel being in contact with said fuze;

a conical insert located in said conical portion of said channel;

an opening extending through said insert and communicating said larger end and said smaller end; and

said larger end being filled with explosive material;

whereby detonation of said explosive material causes said insert to be forced into said smaller end preventing backfire through said extension means and expands the extension prevent its ejection and resulting backfire through the opening which would thus result.

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