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**Duva**

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(54) **LOW VELOCITY DETONATION TRAP FOR MONOPROPELLANT FUEL SYSTEMS**

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(58) **Field of Search** ..... **431/346; 60/39.11, 60/39.462; 220/88.2; 48/192**

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(57) **ABSTRACT**

A Low Velocity Detonation (LVD) trap having acceleration, detonation and High Velocity Detonation (HVD) trap zones. The primary function is to prevent the propagation of LVD explosions in monopropellant fuel systems from propagating to the fuel storage tank. An area of decreasing diameter in the acceleration zone amplifies the pressure pulse propagation of the LVD in the fuel system to intentionally accelerate the rate of detonation such that a HVD can be precipitated in the detonation zone. The diameter of the detonation zone sufficiently violates the critical diameter for the amplified pressure pulse such that the fuel detonates as a HVD. The HVD is then trapped in the HVD trap zone which is designed in accordance with well known methods to prevent propagation of monopropellant fuel detonation from reaching the fuel storage tank. The LVD trap is particularly well suited for use in monopropellant fuel engines used to power torpedoes and in facilities associated with torpedo testing.

**2 Claims, 1 Drawing Sheet**

