



Snap Fit Assembly for a Ruggedized Multi-Section Structure with Selective Embrittlement or Case Hardening

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- Materials and Manufacturing
- NSWC Crane

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Typical fragmentation devices consist of a body holding an explosive, the body being designed to fragment upon ignition of the explosive inside. These devices are manufactured by assembling the steel enclosure, then pouring the explosive through a small opening. Often this involved welding which can lead to altered metallurgical properties of the steel enclosure. Additionally, the geometry of the device is constrained by the need for the device to be welded. Other approaches such as threading are possible, but prevent the application of a pressed explosive as access to the cavity remains limited to a small opening.

NSWC Crane has patented a design for a snap fit assembly for a hollow steel enclosure such as on a device designed to fracture during the ignition of an explosive. The design is intended to remain secure even after exposed to strong impacts and repeated abuse. The design is mechanical, and does not use welding, adhesives, or threading. Relatively little force is needed to assemble the enclosure, but a large force is necessary to pull apart the interface.

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