



Reconfigurable Assembly Fixture for Precision Alignment

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Categories:

- Mechanical Engineering
- NSWC Crane

Keywords:

- Crane
- Materials and Manufacturing
- Mechanical Engineering

The US Navy is seeking a partner for licensing an assembly fixture for use in construction, maintenance, or restoration of complex assemblies with precise fit and alignment requirements.

Construction and maintenance of complex assemblies which require disassembling and reassembling, with small tolerances for fit and alignment, have been a substantial challenge. If initial assembly results do not meet the required specification, the equipment must be reworked. Costs associated with existing methods and equipment rework include tear down, realignment, etc. which can lead to exceeding funding allowances for overhaul and restoration of equipment. Existing methods do not manage or control critical elements of each body or were unsuitable due to use of cast elements which have some degree of variation in body elements.

NSWC Crane has developed, patented, and uses an "Apparatus for Assembling Different Categories of Multi-Element Assemblies to Predetermined Tolerances and Alignments Using a Reconfigurable Assembling and Alignment Apparatus." The device allows for small or very small alignment adjustments to be made while permitting other elements of the multi-element assembly to remain fixed in relation to each other. The tool also allows for assembly, measurement, adjustment, and reassembly of the multi-element assembly with final configuration elements which hold the multi-assembly together in an end use configuration. It is operable with more than one multi-element assembly so that support equipment requirements are reduced and reconfiguration time and effort are reduced to a minimum.

People:

- Waters, Jeffrey (Project leader)

Intellectual Property:

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