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(71) Applicant *(for all designated States except US)*: **LOCKHEED MARTIN CORPORATION** [US/US]; 6801 Rockledge Drive, Bethesda, MD 20817 (US).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: **KANE, James, P., III** [US/US]; 604 Parkwood Avenue, Altamonte Springs, FL 32714 (US).

(74) Agents: **KEANE, Patrick, C.** et al.; Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404 (US).

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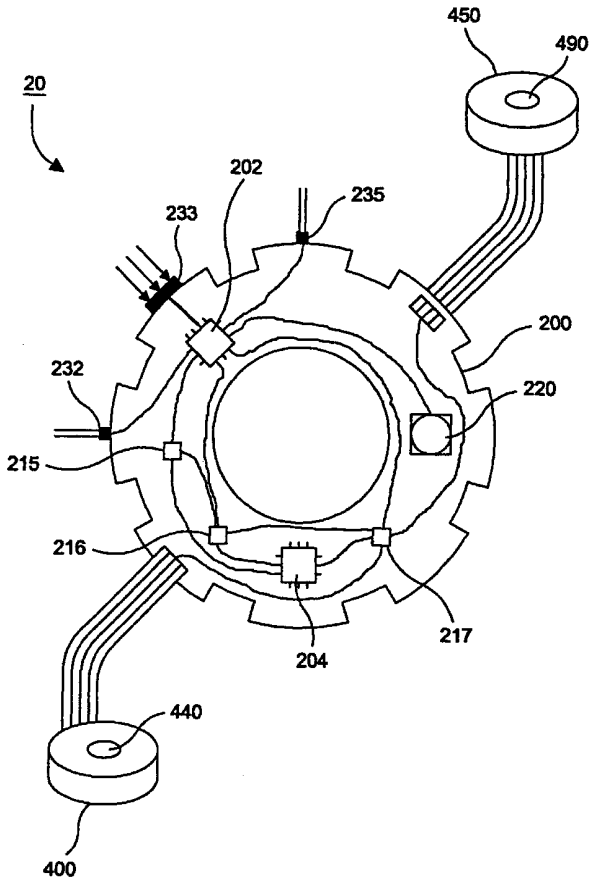
(54) Title: ELECTRONIC SAFE ARM AND FIRE DEVICE




(57) Abstract: An electronic safe arm and fire (ESAF) device has a common module (200) and a pair of programmable devices (400, 450) that are readily configurable to different missile types. The ESAF device has a first static arming switch that is controlled by the first programmable device and a second static arming switch that is controlled by the second programmable device. The ESAF device has a firing module (400) that has an exploding foil initiator. The common module and the firing module can be configured as a standalone module in close proximity to a warhead or can be integrated into a warhead. The common module has some inputs that are used by all the missiles in a group for the same signals; some inputs that are used by all the missiles, but for different signals; and, some inputs that are used by some of the missiles, but not by all of the missiles. The common module has an input port for a separation signal, a communications port for a fuze data signal, and an input port for a signal that can be used to determine safe separation. The first programmable device is a microcontroller. The second programmable device can be a microcontroller or a programmable logic device. The first programmable device and the second programmable device perform a built-in test by checking the other device against a hardwired value. The ESAF device has a dynamic switch that is turned on by one of the programmable devices and controlled by the other programmable device.

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# INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F42C15/40 F42C11/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 F42C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | EP 0 433 697 A (HUGHES AIRCRAFT CO) 26 June 1991 (1991-06-26)<br>abstract; claim 4; figures<br>column 1, line 41 -column 5, line 50 | 1-16,18, 19,21, 22,25-29 |
| A | US 5 245 926 A (HUNTER DONALD W) 21 September 1993 (1993-09-21)<br>claim 1; figure 1<br>column 1, line 54 -column 2, line 44<br>column 3, line 38 - line 50 | |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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| 24 October 2000 | 31/10/2000 |

| Name and mailing address of the ISA | Authorized officer |
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