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(56) Documents Cited by ISA:
GB 2255634 A **WO 1998/055851 A1**
US 3904923 A **US 20060284094 A1**
Sensors Applications Symposium, 2006, Molchanov et al., "Nanosecond gated optical sensors for ocean optic applications", pp147-150
http://web.archive.org/web/20070212000928/http://www.bombdetection.com/cat_details.php?catid=20> INTERNET CITATION, 2007 - XP007911046

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(54) Title of the Invention: **Photomultiplier and detection systems**
Abstract Title: **Photomultiplier and detection systems**

(57) The invention provides a switchable photomultiplier switchable between a detecting state and a non-detecting state comprising a cathode upon which incident radiation is arranged to impinge. The photomultiplier also comprises a series of dynodes arranged to amplify a current created at the cathode upon detection of photoradiation. A first dynode of the series is operatively closest to the cathode and is at a first potential and the electrical potential of the cathode is switchable between a second potential, below the first potential, when the photomultiplier is in the detecting state and a third potential, above the second potential, when the photomultiplier is in the non-detecting state. The invention also provides a detection system arranged to detect radiation-emitting material in an object. The system comprises a detector switchable between a detecting state in which the detector is arranged to detect radiation and a non-detecting state it which the detector is arranged to not detect radiation. The system further comprises a controller arranged to control switching of the detector between the states such that the detector is switched to the non-detecting state whilst an external radiation source is irradiating the object.

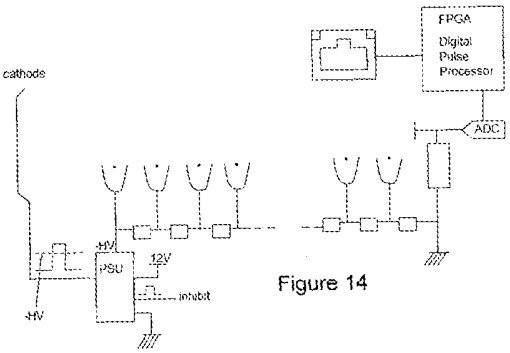

Figure 14

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