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(54) Title: ADVANCED THERMAL NEUTRON DETECTORS AND ASSOCIATED METHODS

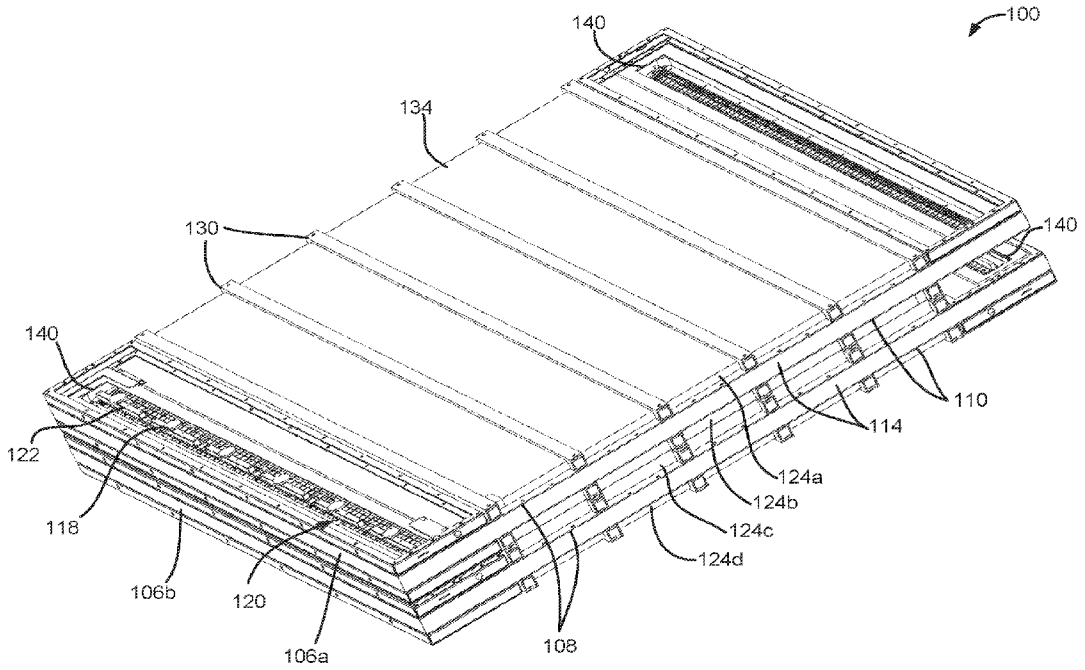

FIGURE 4

(57) Abstract: A narrow thermal neutron detector includes a slidably receivable ionization thermal neutron detector module within an overall housing body. An active sheet layer of the ionization thermal neutron detector module can be tensioned across its width. The ionization thermal neutron detector module can include module upper major surface extents and module lower surface extents such that, when installed within the housing body, the module upper major surface extents are in a first spaced apart confronting relationship with housing upper major surface extents to define a first clearance and module lower major surface extents are in a second spaced apart confronting relationship with housing lower major surface extents to define a second clearance to accommodate housing flexing due to ambient pressure change. The housing body can be formed with a single opening for receiving the ionization thermal neutron detection module or with opposing first and second opposing end openings.

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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)
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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 practicable, search terms used)
Databases consulted: Google Patents, PatBase
Search terms used: Neutron detector, electrode, gas, thermal neutron, pressure, housing/case/container/enclosure, slidable, cap.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4365159 A Young 21 Dec 1982 (1982/12/21) The entire document.	1-38
A	GB 956555 A Gray et al. 29 Apr 1964 (1964/04/29) The entire document.	1-38
A	US 2002/0139935 A1 Klein et al. 03 Oct 2002 (2002/10/03) The entire document.	1-38
A	US 2014/0077091 A1 Ahlen et al. 20 Mar 2014 (2014/03/20) The entire document.	1-38
A	US 2015/0355345 A1 Neyland 10 Dec 2015 (2015/12/10) The entire document.	1-38

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

☒ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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