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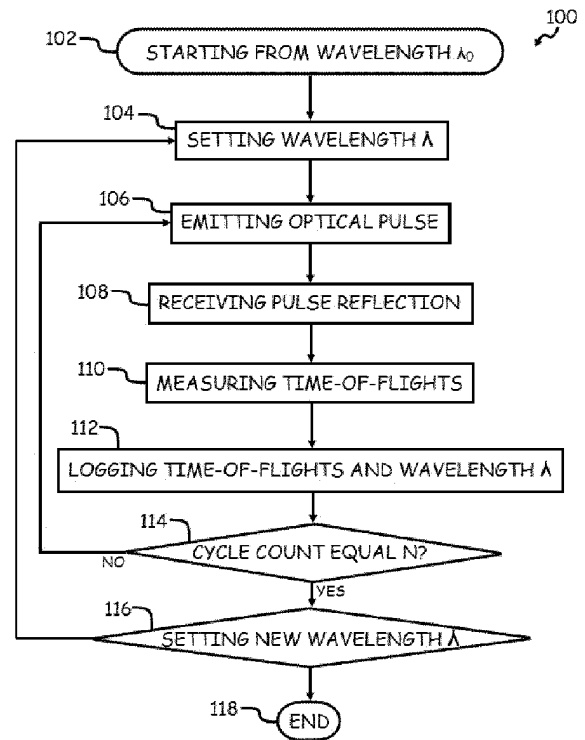
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(54) **OVERHEAT DETECTION USING A FIBER BRAGG GRATINGS ARRAY BY TIME-OF-FLIGHT**

(57) A method for detecting and determining a location of an overheat condition includes producing a narrowband optical signal with a laser source and optical pulse generator. The optical signal is sent into the optical fiber. A plurality of reflected optical signals is received. Reflection intensities are detected using a photodetector. The reflection intensities are compared with a triggering threshold. Response times of the reflected optical signals are recorded whenever the reflection intensity of the optical signals is greater than the triggering threshold. The narrowband optical signal is adjusted to another wavelength. An anomaly reflected optical signal is identified using a characteristic of the timings obtained through a range of wavelengths. The location of the overheat condition recorded response times is calculated. The location and existence of the overheat condition is communicated.



**Fig. 3**

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EUROPEAN SEARCH REPORT

Application Number

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DOCUMENTS CONSIDERED TO BE RELEVANT

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

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Place of search <b>Munich</b>	Date of completion of the search <b>25 March 2024</b>	Examiner <b>Paraf, Edouard</b>
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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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