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Fiorini et al.

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(54) **AMPLIFIER AND RADIATION DETECTOR**

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(71) Applicants: **Carlo Fiorini**, Milan (IT); **Luca Bombelli**, Milan (IT)

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(72) Inventors: **Carlo Fiorini**, Milan (IT); **Luca Bombelli**, Milan (IT)

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(73) Assignees: **HORIBA, LTD.**, Kyoto (JP);
POLITECNICO DI MILANO, Milan (IT)

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Primary Examiner — David Porta

Assistant Examiner — Mamadou Faye

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(74) *Attorney, Agent, or Firm* — Cantor Colburn LLP

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(57) **ABSTRACT**

In a preamplifier (amplifier) for detecting radiation, an output of the preamplifier is set as an output of the first amplifying circuit, a capacitor is connected in parallel to the first amplifying circuit, and the second amplifying circuit with a positive gain of less than onefold is connected between the output terminal and the input terminal of the first amplifying circuit through a switch. When the switch is closed, the capacitor is discharged and reset. As the gain of the second amplifying circuit is less than onefold, the gain of the preamplifier is less than the loop gain of the first amplifying circuit alone during the reset operation, making it harder for oscillation to occur. Accordingly, the preamplifier can reduce the compensation capacitance compared to a conventional case and can shorten the reset time, while preventing oscillation.

(52) **U.S. Cl.**

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H03F 3/087 (2013.01); **G01J 1/46** (2013.01);
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(58) **Field of Classification Search**

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G01T 1/161; G01T 1/29

See application file for complete search history.

4 Claims, 2 Drawing Sheets

