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Kawabata

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(54) **MAGNETIC FIELD MEASURING
OPTICALLY PUMPED MAGNETOMETER
APPARATUS**

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331/94.1; 356/364

(58) **Field of Classification Search** 324/300-322,
324/244.1; 600/409, 410, 411, 422; 331/94.1;
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See application file for complete search history.

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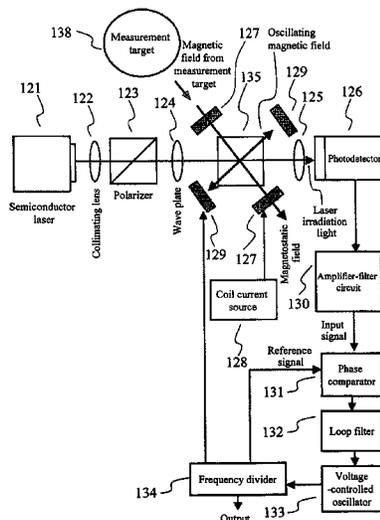
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(57) **ABSTRACT**

Providing: quickly brining a vapor cell 119 to a desired temperature when retaining the heat of the vapor cell 119 to enhance the magnetic field detection performance of an optically pumped magnetometer; preventing adherence of atoms in the vapor cell 119 to a laser irradiation light passing-through part of the vapor cell 119; downsizing the periphery of the vapor cell 119; and suppressing the effect of a magnetic field from a heater used to retain the heat of the vapor cell 119. The present invention includes: a transparent film heater 118 provided to a laser irradiation light passing-through part of a vapor cell 119, the vapor cell 119 being a magnetic detection part of the optically pumped magnetometer; a temperature detector 115 provided at a center part of a side of the vapor cell 119; a temperature regulator 111 that sets a desired temperature for heat retention of the vapor cell 119 and compares the desired temperature and the actual temperature of the vapor cell measured by the temperature detector 115; an operation unit 112 that upon receipt of a PID control signal for temperature control from the temperature regulator 111, performs a temperature adjustment and switches on/off, in a pulsed manner, current applied to the transparent film heater 118 after the desired temperature is reached; and a heater power supply 113 that upon receipt of an operation signal from the operation unit 112, applies current to the transparent film heater 118.

10 Claims, 5 Drawing Sheets

