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Abramov et al.

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[54] MAGNETIC FIELD GRADIENT MEASURING DEVICE

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[58] Field of Search ..... 324/0.5 **R**, 0.5 **E,** 0.5 **F**

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[57]

Disclosure is made of a magnetic field gradient measuring device comprising two sensors arranged at points of a magnetic field which are to be investigated, and connected with their outputs to inputs of a phase detector. Each of the two sensors comprises an absorption cell filled with atoms of a working matter. Arranged at the input of said absorption cell is a light source intended for optical pumping of atoms of the working matter. At the output of said absorption cell there is arranged a photocell intended to register the beam of light passing through the cell. The cell itself is located inside a radio frequency coil energized with current of a variable frequency close to the magnetic transition resonance frequency of atoms of the working matter, which is determined by the magnetic field intensity at the sensor location. The coils are energized by a means common for both sensors.

6 Claims, 4 Drawing Figures