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(54) **ELECTRIC MOTOR CONTROL USING TEMPERATURE AND MAGNETIC FIELD STRENGTH VARIATION OF ITS STATOR LIMINATIONS**

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(58) **Field of Search** 324/244.1, 244, 324/252, 207.21, 260, 262, 96; 250/339.04, 339.08, 339.11, 227.11; 702/134, 135; 374/9, 130; 318/471, 708; 361/24–27

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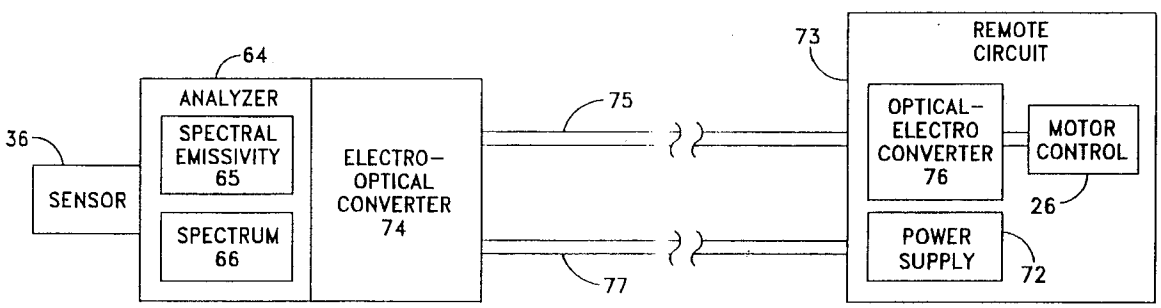
(57) **ABSTRACT**

A sensor for facilitating the measurement of temperature and magnetic field is described. The sensor comprises an optical cable having a distal end encompassed in a sheath of giant magnetoresistive material. Temperature changes alter the spectrum emissivity of the giant magnetoresistive material. Magnetic field changes alter the spectrum changes that occur from distorting the optical fiber that occur when the giant magnetoresistive material distorts the optical fiber.

10 Claims, 5 Drawing Sheets