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(54) **ELECTRICITY METER**

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(58) **Field of Search** **340/870.02, 870.03, 340/870.01; 324/142, 137; 250/231.14, 231.16, 231.15**

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(57) **ABSTRACT**

A meter for measuring electricity usage for a given load includes a housing and two light sources disposed in the housing and configured to output light at a predetermined frequency. Two light receivers are disposed in the housing so that a light path is defined between each light source and its respective light receiver. Each light receiver is configured to receive the light from its light source and to output a signal responsively thereto. A rotatable member is disposed in the housing in the light paths and is rotatable responsively to the electricity usage. The member has a first portion and a second portion. The first portion transmits incident light while the second portion blocks light. The first portion and the second portion are defined on the member so that the member modulates the light as it rotates. A filter circuit in communication with the light receiver is configured to receive the output signal from the light receiver and to detect therefrom modulation of the light by the rotatable member.

16 Claims, 8 Drawing Sheets

