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Kelley et al.

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- [54] **ADJUSTABLE SPEED DRIVE FOR RESIDENTIAL APPLICATIONS**
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[57] **ABSTRACT**

The present invention relates to a method and apparatus for controlling the speed of an electronically commutated motor. Such motors typically include a rotor, a stator coil, and an electronic commutator for controlling electrical power flow from an electrical power source of predetermined frequency to the stator coil. The invention includes the steps of generating a switch control signal responsive to a position of the rotor; generating a phase gating signal from the electrical power source of predetermined frequency, the phase gating signal having twice the predetermined frequency and having transitions in timed relation to the zero crossings of the electrical power source; varying the timed relation of the phase gating signal in accordance with an operational parameter desired for the electronically commutated motor; generating a phase controlled switch signal which is responsive to the phase gating signal and the switch control signals; and applying the phase controlled switch signal to the electronic commutator to control the electronic commutator, thereby controlling the speed of the electronically commutated motor.

36 Claims, 9 Drawing Sheets