

[54] TRACTION MOTOR OPTIMIZING SYSTEM FOR FORKLIFT VEHICLES

[75] Inventor: Isaac Avitan, Vestal, N.Y.
 [73] Assignee: Raymond Corporation, Greene, N.Y.
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Primary Examiner—Bentsu Ro

Attorney, Agent, or Firm—Salzman & Levy

[57] ABSTRACT

A system for optimizing control of separately excited shunt-wound dc motors, where optimization is achieved through microprocessor-based independent PWM control of a chopper (armature) and an H-bridge (field). Connected to the armature is an armature voltage amplifier for varying the applied armature voltage. A field voltage amplifier is also provided for determining the direction of motor rotation and varying the voltage applied to the field winding. A first sensor is connected to the motor armature in order to determine the motor rotational speed. A second sensor is connected to the armature circuit in order to determine the armature current. A third sensor is connected to the field circuit in order to determine the field current. A decoupling controller uses the motor speed and armature current information, and adjusts the armature voltage and the field voltage. An optimal controller uses the motor speed, field current and armature current information, and adjusts the armature voltage and the field voltage.

9 Claims, 5 Drawing Sheets

