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(54) **POWER TOOL**

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(57) **ABSTRACT**

A power tool includes a motor, a speed regulation mechanism, a driver circuit, and a control module. The motor includes a stator winding and a rotor. The speed regulation mechanism is at least used for setting a target rotational speed of the motor. The driver circuit is used for delivering electrical energy provided by a power supply device from a direct current bus to the motor, where the driver circuit includes multiple electronic switches connected between the power supply device and the motor. The control module is configured to calculate a voltage vector according to a measured rotational speed of the motor, a phase current of the stator winding, and the target rotational speed and overmodulate the voltage vector to output a pulse-width modulation (PWM) signal to the driver circuit. A per-unit value of an amplitude of the voltage vector ranges from 0 to 1.15.