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(54) **MOTOR CONTROL DEVICE FOR
ACHIEVING SAFE AND EFFICIENT
BRAKING AND MOTOR BRAKING
METHOD THEREOF**

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(57) **ABSTRACT**

A motor is coupled to a motor control device including a set of high-side switches, a set of low-side switches, a capacitor and a controller. The set of high-side switches and the set of low-side switches are coupled to the motor. The capacitor is coupled to the set of high-side switches. The controller is coupled to the capacitor, the set of high-side switches and the set of low-side switches. A method of braking the motor includes upon the motor being disconnected from an external power source, the controller receiving a supply voltage from the capacitor, turning on the set of low-side switches, turning off the set of high-side switches, and the controller switching the set of low-side switches according to the supply voltage.

