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(54) **POWER TOOL WITH PERMANENT  
MAGNET SYNCHRONOUS RELUCTANCE  
MACHINE**

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(71) Applicant: **MILWAUKEE ELECTRIC TOOL  
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(57) **ABSTRACT**

A power tool including a housing and a motor assembly positioned within the housing. The motor assembly includes a stator with winding slots that receive stator windings and a rotor. The rotor includes a rotor body with a first slot positioned a first distance from a center of the rotor body, a second slot positioned a second distance from the center of the rotor body, and a third slot positioned a third distance from the center of the rotor body. The first slot, the second slot, and the third slot are curved about a common center. The rotor further includes a first magnet positioned within the first slot, a second magnet positioned within the second slot, and a third magnet positioned within the third slot.

