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**Chan et al.**

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(54) **HALF-BRIDGE INVERTER**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(22) Filed: **Mar. 2, 2005**

(51) **Int. Cl.**  
**H04M 7/5387 (2006.01)**

(52) **U.S. Cl.** ..... **363/132**

(58) **Field of Classification Search** ..... 363/95,  
363/97, 131, 132; 315/306, 307, 308  
See application file for complete search history.

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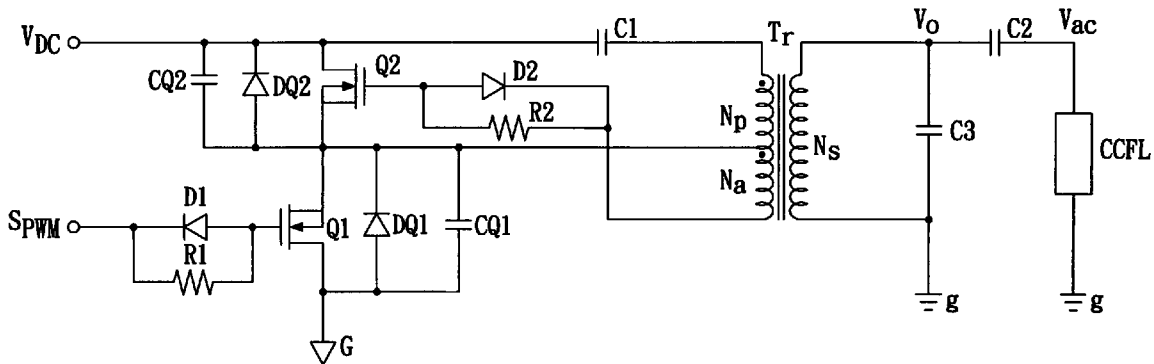
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(57) **ABSTRACT**

A half-bridge inverter achieves an inversion by switching an external-driven switch and a self-driven switch, and includes a transformer having a primary winding, a secondary winding and an auxiliary winding. The external-driven switch coupled to the first winding and ground is controlled by a square wave signal. The self-driven switch coupled to the primary winding, auxiliary winding and a DC power supply is controlled by an output voltage of the auxiliary winding. A resonant capacitor is coupled to the secondary winding. The square wave signal controls the switching of the external-driven switch, and the switching of the self-driven switch controlled by the output voltage of the auxiliary winding introduces DC power into the primary winding of the transformer while sensing an alternating voltage at the secondary winding of the transformer. A resonant capacitor filters harmonic waves into low-noise AC power to reduce interferences and supply power to a load.

**7 Claims, 6 Drawing Sheets**



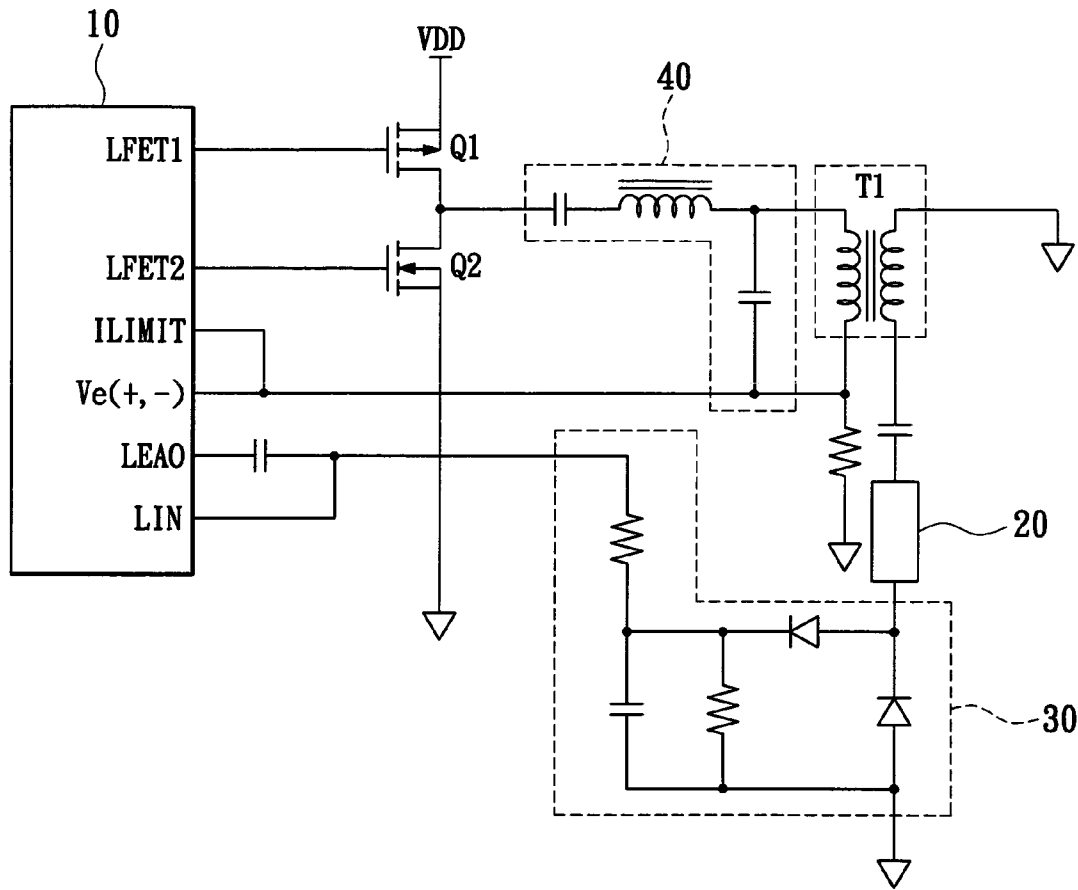


FIG. 1  
PRIOR ART

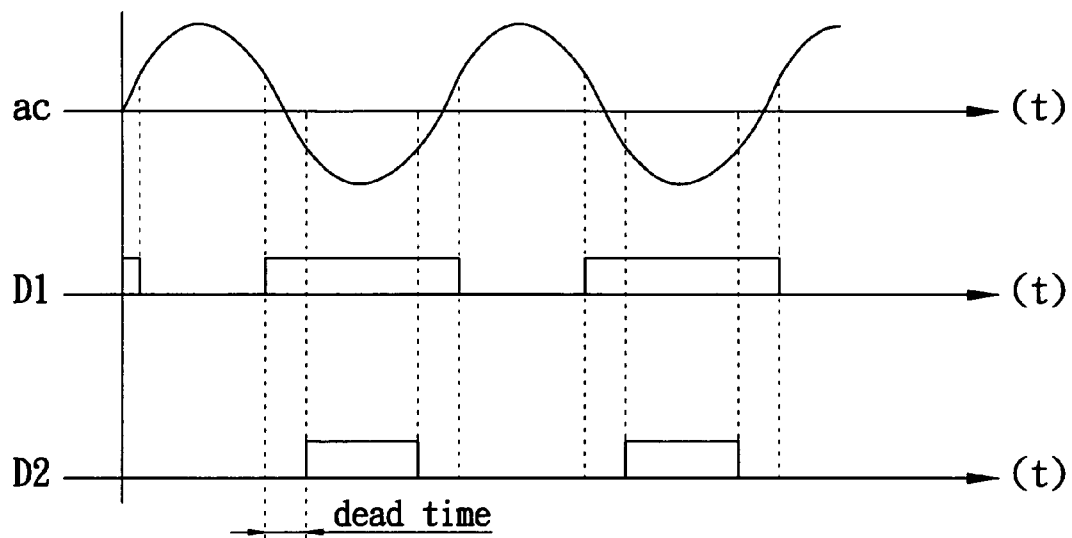


FIG. 2  
PRIOR ART

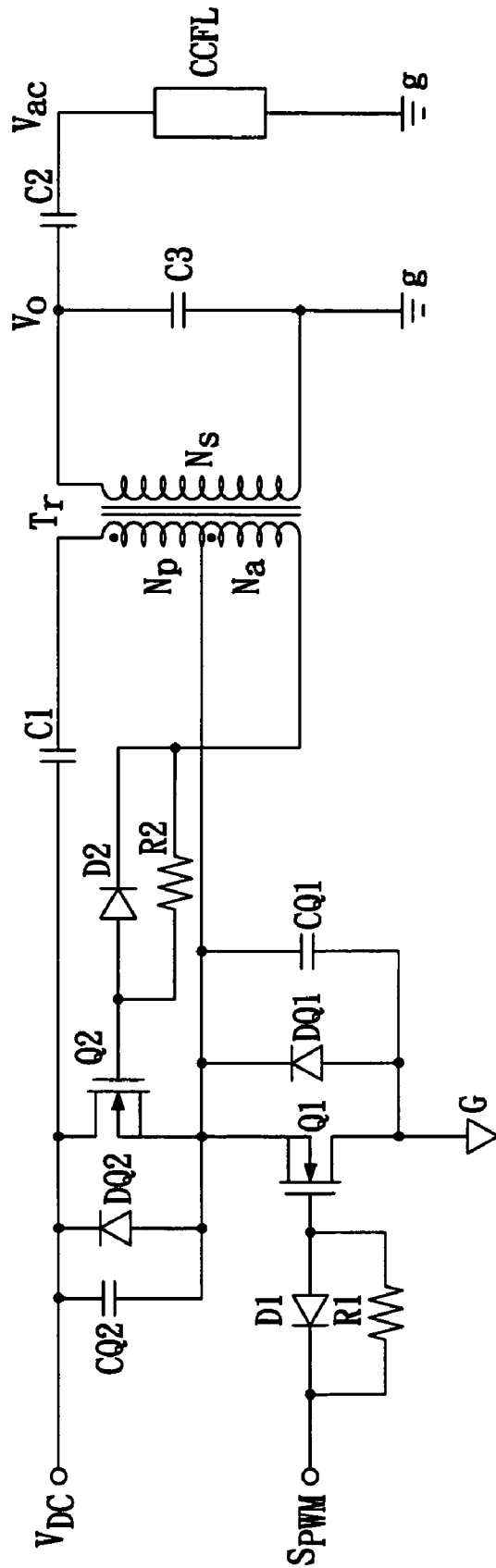


FIG. 3

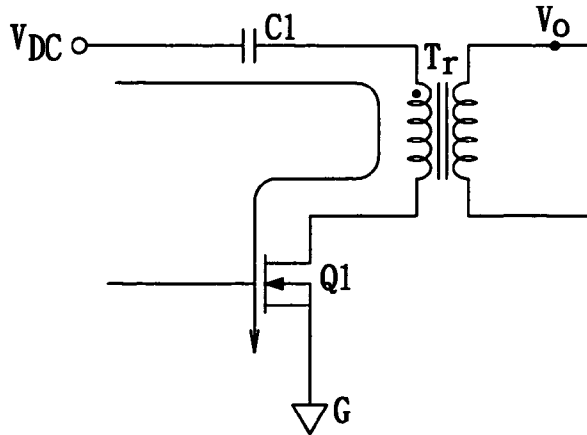


FIG. 4A

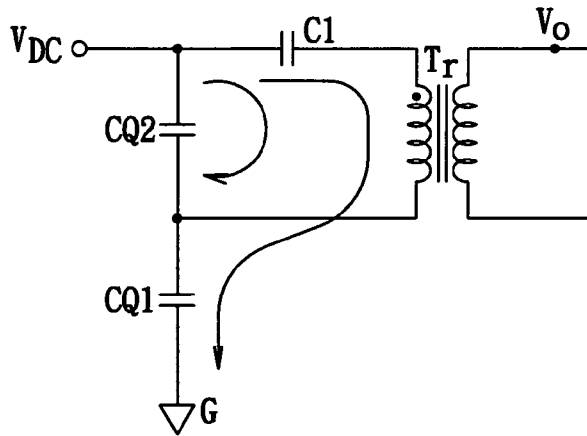


FIG. 4B

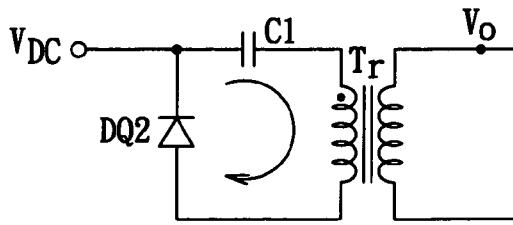


FIG. 4C

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