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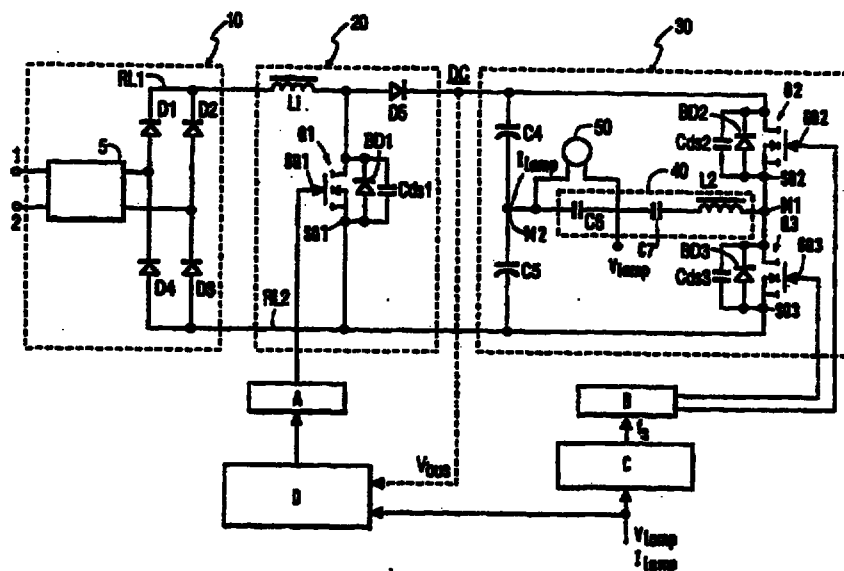
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(54) Title: METHOD FOR IGNITING AND OPERATING A HIGH-PRESSURE DISCHARGE LAMP AND A CIRCUIT FOR PERFORMING THE METHOD



(57) Abstract

A high frequency HID ballast includes an inverter for operating the HID lamp at high frequency and an arc instability controller which detects and adjusts the operating frequency of the inverter to avoid acoustic resonance of the discharge arc. The ballast ensures that the power delivered to the lamp remains substantially constant despite variations in the gain of the inverter which occur with changes in the operating frequency. Power control is accomplished by sensing lamp power and controlling a boost converter to vary the bus voltage feeding the inverter. The boost converter is also controlled during lamp ignition, when the load provided by the HID lamp is low, to clamp the bus voltage at a predetermined level. The ballast employs universal techniques suitable for operating HID lamps of different types, wattages and manufacturers despite the occurrence of acoustic resonance/arc instabilities among these lamps over a fairly broad frequency range.

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