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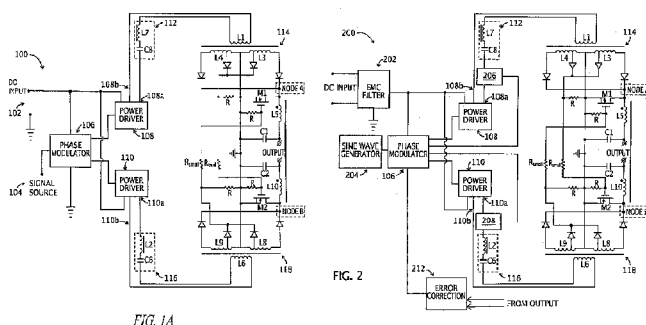
(54) Title: **ULTRA-HIGH EFFICIENCY SWITCHING POWER INVERTER AND POWER AMPLIFIER**

FIG. 1A

FIG. 2

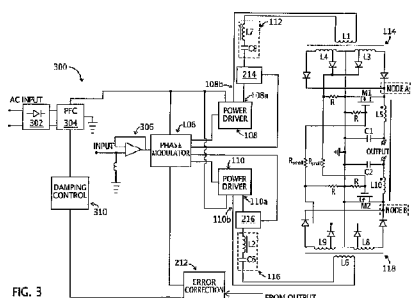


FIG. 3

(57) Abstract: An apparatus for providing a power output proportional to a source signal, including a phase modulator driving an upper and a lower power driver with carrier waveforms having a relative phase difference and having a signal modulated thereon, and coupled to a resonator circuit to operate as a substantially zero-voltage zero-current switching element, with the output fed into respective upper and lower transformers. Identical symmetrical secondary circuits on the transformers have a rectifier stage electrically connected to an inductor in series with an upper capacitor to form an upper low pass filter, and a high speed semiconductor switch coupled to a node between the inductor and rectifier stage provides a return path to ground. The lower secondary circuit inductor is highly coupled (≥ 0.99) to the upper inductor, and an output formed across the upper and lower output elements is isolated from rail voltage and balanced with bi-directional current.