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(54) **ARC FURNACE POWER SUPPLY WITH RESONANT CIRCUIT**

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(57) **ABSTRACT**

A power supply system for an electric arc furnace includes an AC input connectable to an electrical grid and an AC output for supplying at least one power electrode of the arc furnace; a resonant circuit interconnected between the AC input and the AC output. The resonant circuit includes a controllable bypass switch for connecting and disconnecting a circuit input and a circuit output of the resonant circuit and a capacitor and a main inductor connected in parallel with the bypass switch.