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Daniel

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(54) **METHOD AND SYSTEM OF CONTROLLING HEATING CURRENT FOR HOT WIRE PROCESSES**

(71) Applicant: **LINCOLN GLOBAL, INC.**, City of Industry, CA (US)

(72) Inventor: **Joseph A. Daniel**, Sagamore Hill, OH (US)

(73) Assignee: **LINCOLN GLOBAL, INC.**, City of Industry, CA (US)

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CPC **B23K 11/0013** (2013.01); **B23K 9/1093** (2013.01); **B23K 26/14** (2013.01)

(58) **Field of Classification Search**
CPC combination set(s) only.
See application file for complete search history.

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Primary Examiner — Dana Ross

Assistant Examiner — Renee Larose

(74) *Attorney, Agent, or Firm* — Perkins Coie LLP

(57) **ABSTRACT**

A system and method for controlling heating current for hot-wire processes in any of brazing, cladding, building up, filling, hard-facing overlaying, welding, and joining applications is provided. The system includes a high intensity energy source configured to heat at least one workpiece to create a molten puddle. The system also includes a feeder subsystem that includes a wire feeder configured to feed a filler wire to the molten puddle, a first power supply configured to supply a first current through a first length of the filler wire, and a second power supply configured to supply a second current through a second length of the filler wire. The first current and the second current provide a power sufficient to resistance-heat the filler wire to at or near a melting temperature of the filler wire, and in some embodiment, the first power supply provides more than 50% of the power.

18 Claims, 4 Drawing Sheets

