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PLASMA ARC ADDITIVE MANUFACTURING APPLICATIONS**

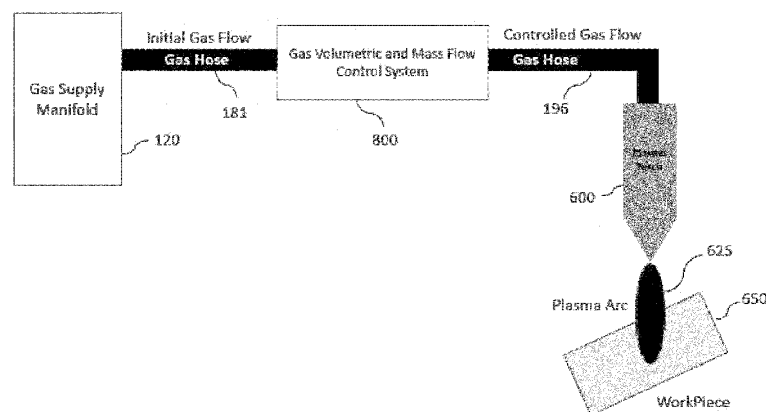


FIG. 1

(57) Abstract: Provided are systems and methods for regulation of mass flow and monitoring of volumetric flow, for regulation of volumetric flow and monitoring of mass flow, and for regulation of both mass and volumetric flow of gas to a plasma torch for wire-plasma arc additive manufacturing processes, and methods for manufacturing metal objects by additive manufacturing using one or more of the systems.

[Continued on next page]

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