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(54) **ELECTROSURGICAL MEDICAL SYSTEM AND METHOD**

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See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 649 days.

This patent is subject to a terminal disclaimer.

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(58) **Field of Classification Search**

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(57) **ABSTRACT**

A medical device system and method provide an RF electro-surgical generator coupled to an electro-surgical electrode via a patient box disposed in close proximity to the patient. An RF signal is delivered from the generator to the patient box where signal power is increased and the RF signal delivered to the electro-surgical electrode. The patient box is coupled to the electro-surgical electrode by a short cable capable of carrying an HV, high frequency 5 MHz signal without leakage. An electrical characteristic associated with the electro-surgical electrode is monitored and a desired RF power output and duty cycle maintained by adjusting DC input voltage applied to an RF amplifier, responsive to the monitoring. The system determines when the electro-surgical cutting electrode has started cutting and switches from a start mode to a run mode having a different RF duty cycle and a reduced RF power output controlled by a servo system.

10 Claims, 19 Drawing Sheets

