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(54) Title: STERILISATION APPARATUS FOR PRODUCING PLASMA AND HYDROXYL RADICALS

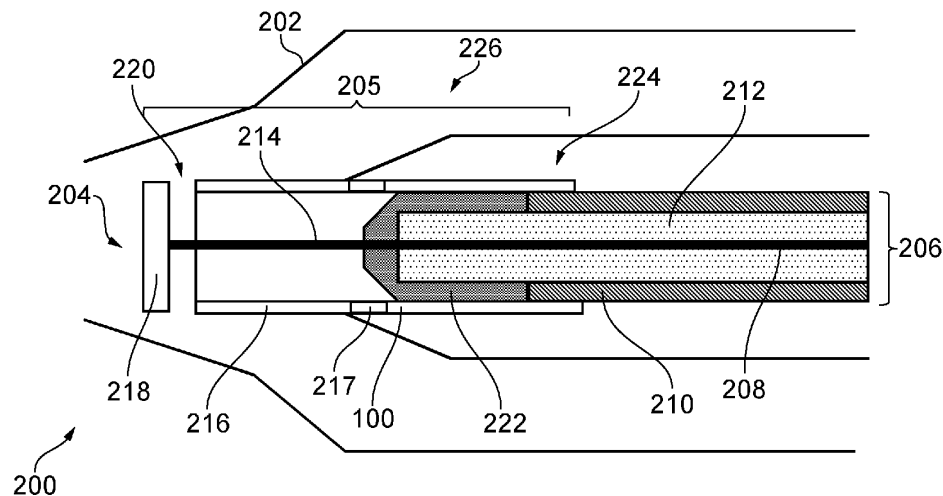


FIG. 2

(57) Abstract: The invention relates to sterilisation systems suitable for clinical use. In particular, there is provided a sterilisation device comprising: a housing defining a water mist fluid flow path between an inlet for receiving water mist and an outlet for directing a flow of hydroxyl radicals towards a region to be sterilised; an energy delivery tip configured to produce a thermal or non-thermal plasma; a coaxial transmission line arranged to convey radiofrequency (RF) and/or microwave frequency electromagnetic (EM) energy; and a gas conduit in the housing and arranged to deliver gas to the energy delivery tip, wherein the energy delivery tip extends from a distal end of the coaxial transmission line. The energy delivery tip comprises: a first electrode electrically connected to an inner conductor of the coaxial transmission line; and a second electrode electrically connected to an outer conductor of the coaxial transmission line. The second electrode defines an internal volume of the energy delivery tip, wherein the first electrode extends longitudinally within the

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internal volume. The first electrode and second electrode are configured to: strike a plasma in the gas delivered to the energy delivery tip, and direct the plasma into the water mist fluid flow path to form hydroxyl radicals therein.