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[Continued on next page]

(54) Title: CATHETER SYSTEM FOR VESSEL WALL INJECTION AND PERIVASCULAR RENAL DENERVATION

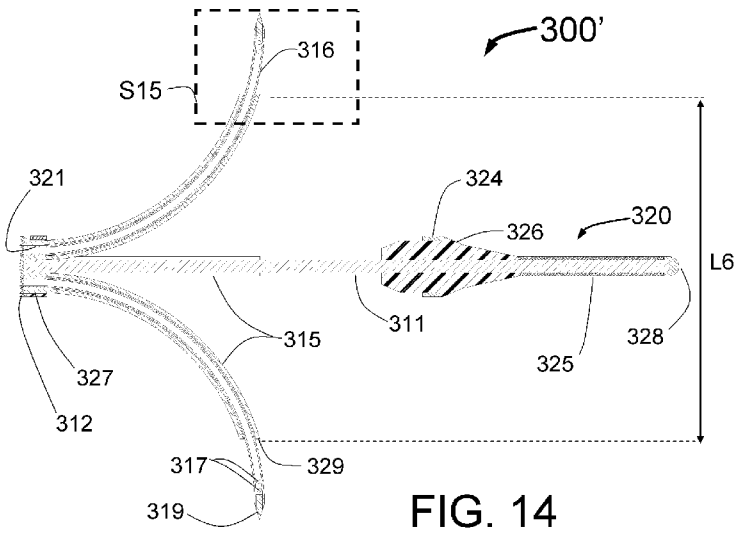


FIG. 14

(57) Abstract: A catheter-basedAintravascular ablation (denervation) system includes a multiplicity of needles which expand open around a central axis to engage the wall of a blood vessel, or the wall of the left atrium, allowing the injection of a cytotoxic or/or neurotoxic solution for ablating conducting tissue, or nerve fibers around the ostium of the pulmonary vein, or circumferentially in or just beyond the outer layer of the renal artery. The expandable needle delivery system is formed with self-expanding materials and include structures, near the end portion of the needles, or using separate guide tubes. The system also includes means to limit and/or adjust the depth of penetration of the ablative fluid into the tissue of the wall of the targeted blood vessel.

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