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(54) Title: ELECTRODE DESIGN FOR DIRECTIONAL LITHOTRIPSY CATHETERS

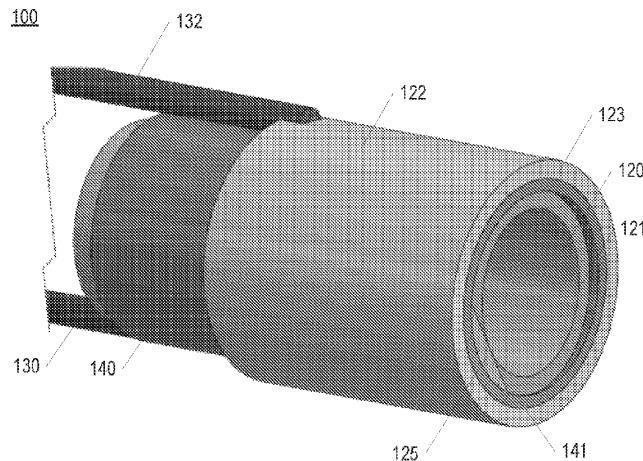


FIG. 3

(57) **Abstract:** The present disclosure provides a catheter for treating lesions in a body lumen, such as calcified lesions and occlusions in vasculature. The catheter can include a dual-layer electrode assembly having a first conductive sheath and a second conductive sheath arranged circumferentially therearound. In some implementations, a first conductive sheath can be a flat coil. When a voltage is applied across the conductive sheaths, current flows across an arcing region, for example, from the distal side edge of the first sheath to the distal side edge of the second sheath to produce shock waves and/or cavitation bubbles. As a treatment continues, the sheaths slowly erode at the arcing region where current flows between the sheaths. To increase the lifespan of the electrode assembly, the distal side edges of the sheaths may be shaped to promote erosion of the sheaths in a predetermined or semi-controlled pattern.

[Continued on next page]

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