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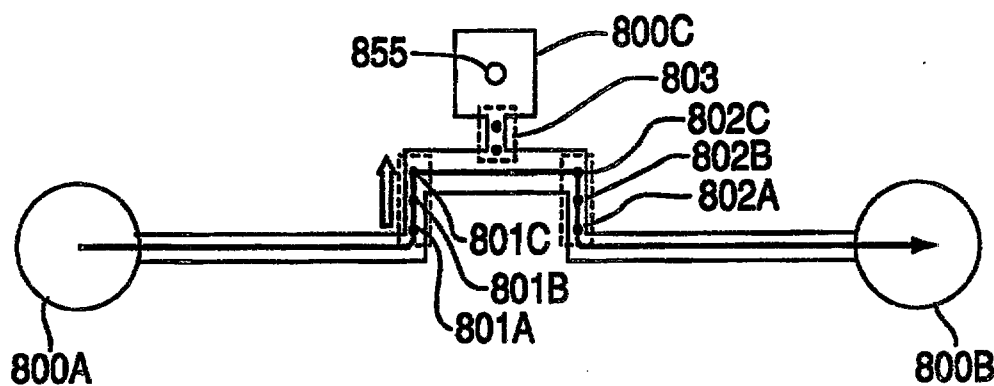
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(57) Abstract

The invention provides electrode-based pumps (803) and methods of operating such pumps. In one embodiment, the invention provides an electrode-based pump situated in a fluid channel comprising a first electrode (801A) and a second electrode (801B), wherein the first (801A) and second (801B) electrodes have a diameter from about 25 microns to about 100 microns and are spaced from about 100 microns to about 2,500 microns apart. In another embodiment, the invention provides an electrode-based pump comprising a first electrode (801A), second electrode (801B) and third electrode (801C).