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(54) Title: OSMOTIC METHODS AND SYSTEMS INVOLVING ENERGY RECOVERY

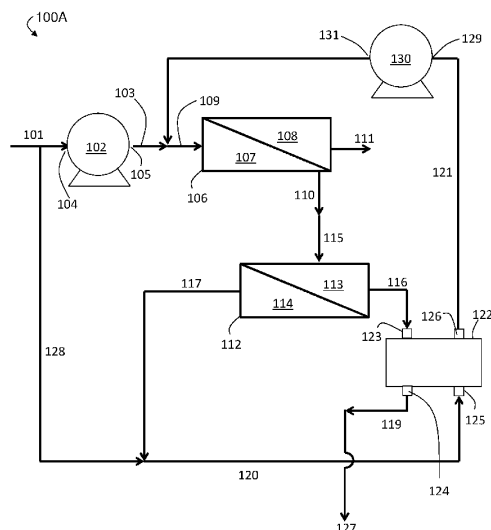


FIG. 1A

(57) Abstract: Liquid solution concentration methods and related systems involving osmosis units and energy recovery are generally described. In some embodiments, an osmotic system has a pump, a first reverse osmosis unit, a second reverse osmosis unit, and one or more energy recovery devices. Various embodiments are directed to features such as balancing streams, recirculation streams, and/or valving that alone or in combination may afford improved energy efficiency and/or system performance. Some embodiments may improve performance of certain types of energy recovery devices in combination with osmosis units, such as isobaric or turbine energy recovery devices.

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