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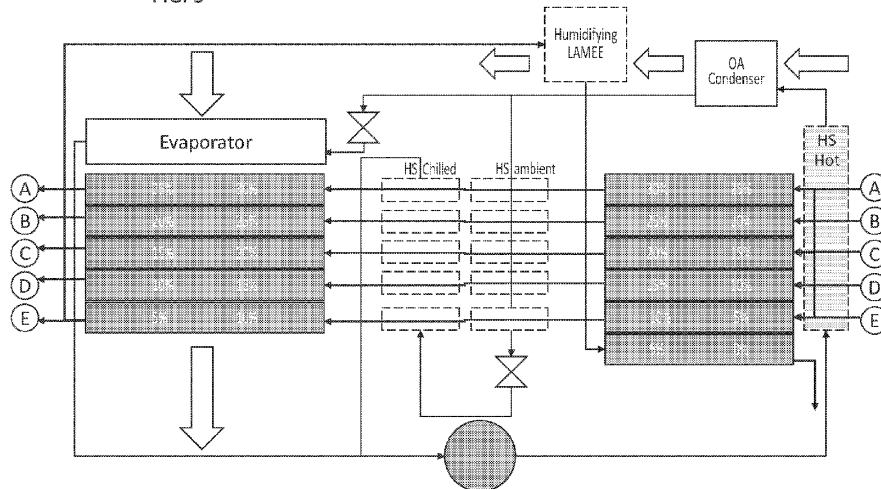
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(54) Title: ELECTROCHEMICALLY REGENERATED LIQUID DESICCANT DEHUMIDIFICATION SYSTEM USING A SECONDARY HEAT PUMP

FIG. 5



(57) Abstract: A liquid desiccant regenerator configured to produce a first output stream with a higher concentration of a liquid desiccant than a first input stream. The regenerator also produces a second output stream with a lower concentration of the liquid desiccant than a second input stream. Regeneration of the liquid desiccant in the liquid desiccant regenerator decreases a temperature of the liquid desiccant regenerator. The system includes an air contactor coupled to the first output stream and exposing an input air stream to the first output stream. The first output stream absorbs water from the input air stream to form at least one diluted output desiccant stream. A heat pump of the system is thermally coupled to move the heat from the first output stream to the liquid desiccant regenerator. The heat moved to the liquid desiccant regenerator increases an efficiency of the liquid desiccant regenerator.

[Continued on next page]

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