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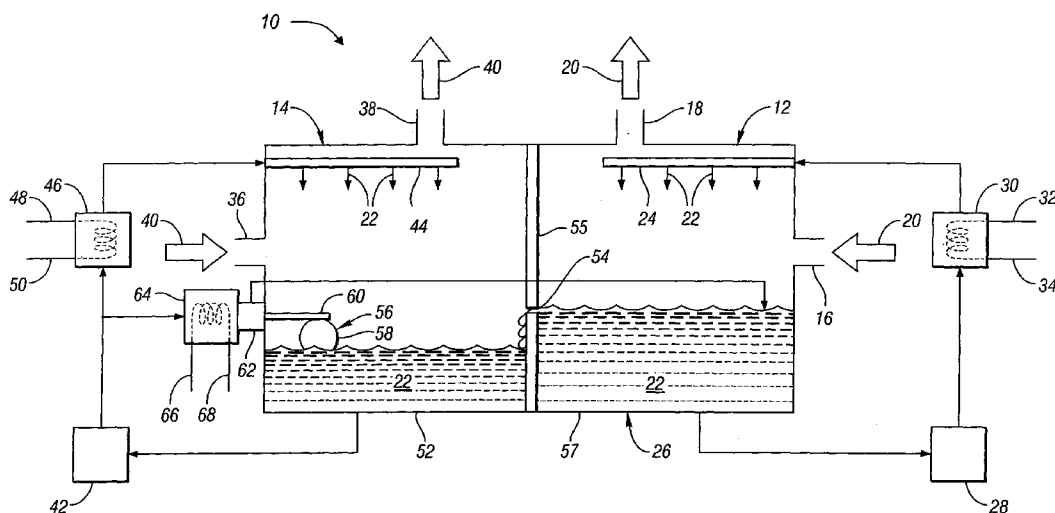
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(54) **Title:** SYSTEM AND METHOD FOR MANAGING WATER CONTENT IN A FLUID



(57) **Abstract:** A system and method for managing water content in a fluid include a collection chamber for collecting water from the fluid with a desiccant, and a regeneration chamber for collecting water from the desiccant and transferring it to a second fluid. An evaporator cools the desiccant entering the collection chamber, and a condenser heats the desiccant entering the regeneration chamber. Diluted desiccant from the collection chamber is exchanged with concentrated desiccant from the regeneration chamber in such a way as to efficiently control the transfer of both mass and heat between the chambers. In one embodiment, mass is not exchanged until one or both of the desiccant levels in the chambers exceeds a predetermined level. Heat is transferred between the two desiccant flows as they are transferred between the chambers. This increases efficiency and reduces the energy input required for the evaporator and the condenser.

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