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(54) Title: COMBINED HEAT SOURCE AND VACUUM SOURCE FOR LOW-COST DISTILLATION AND DESALINATION

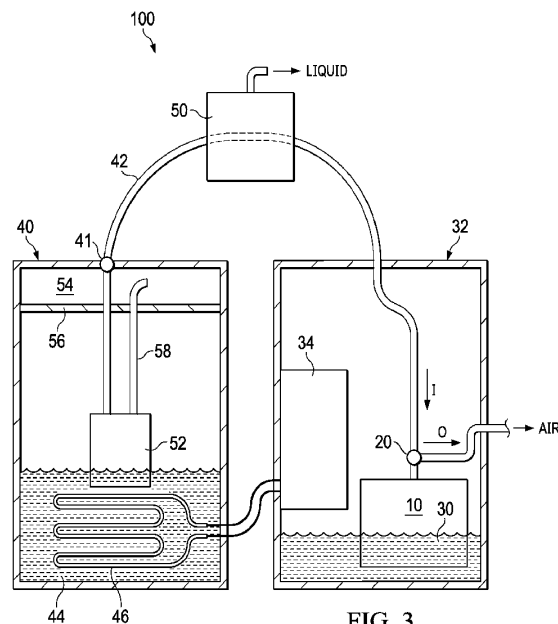


FIG. 3

(57) Abstract: A distillation and desalination system (100) can include a refrigeration unit and a vacuum source (10) positioned in the refrigeration unit. The vacuum source (10) can include a first chamber (22) defining a first chamber volume, a second chamber (24) defining a second chamber volume, a flexible diaphragm (16) dividing the first chamber (22) and the second chamber (24), and a check valve (20) permitting gas transport into and out of the first chamber (22), the check valve (20) comprising an inlet and an outlet. The system (100) can also include a distillation unit having a distillation chamber (40), a saline liquid (44) in the distillation chamber (40), and a headspace (54) above the saline liquid (44), the headspace (54) comprising a gas. The inlet of the check valve (20) can be fluidically coupled to the headspace (54) of the distillation unit.

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