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(54) Title: THERMODYNAMIC BALANCING OF COMBINED HEAT AND MASS EXCHANGE DEVICES

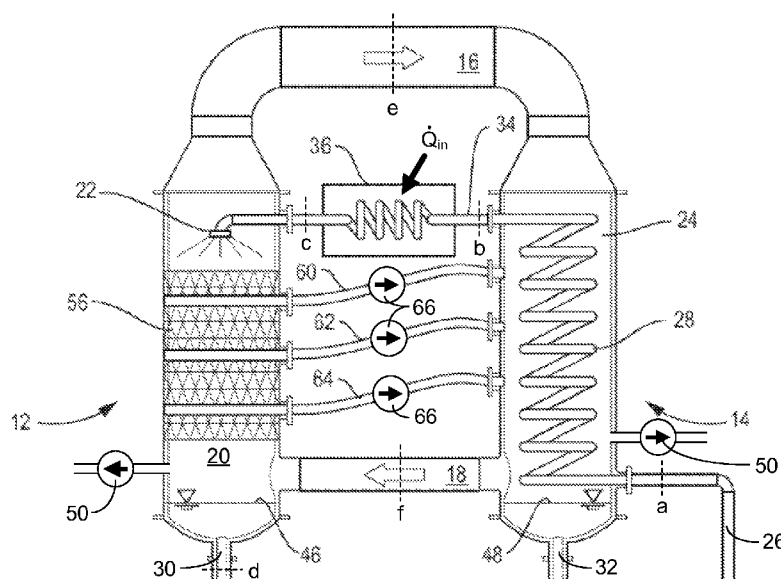


FIG. 1

(57) Abstract: A carrier-gas mixture is directed through a fluid flow path (16, 18) in a combined heat and mass transfer device (12, 14), which can be operated at sub-atmospheric pressure. Heat and mass are transferred from/ to the carrier-gas mixture via interaction with a liquid composition including a vaporizable component in a liquid state to substantially change the content of the vaporizable component in the carrier-gas mixture via evaporation or condensation. The mass flow rate of the carrier-gas mixture is varied by extracting/injecting (60, 62, 64) the carrier-gas mixture from at least one intermediate location in the fluid flow path, and/or the mass flow rate of the liquid composition is varied by extracting/injecting the liquid composition from at least one intermediate location in the fluid flow path. The flow of the carrier-gas mixture or the liquid composition is regulated to reduce the average local enthalpy pinch.



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