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(54) Title: FLUE GAS CONDITIONING

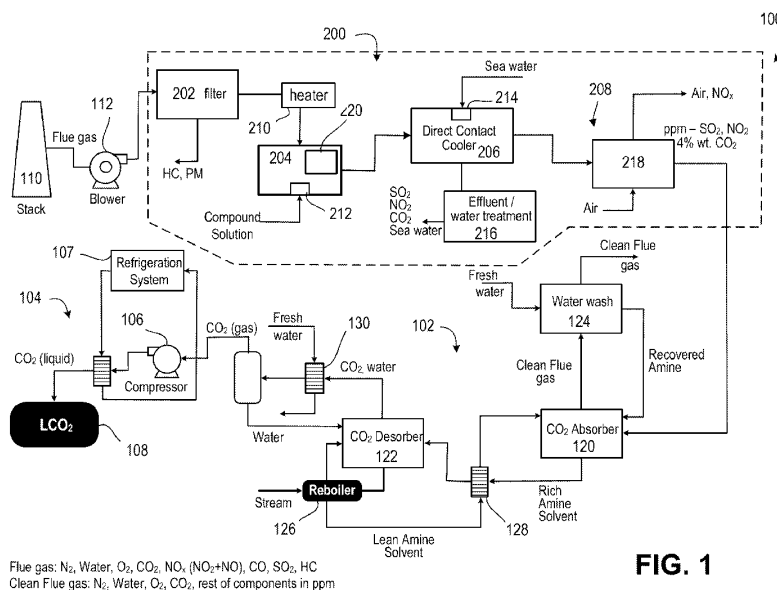


FIG. 1

(57) Abstract: A gas conditioning system removes contaminants including nitrogen oxides and sulfur oxides from flue gas of a marine vessel, and includes an oxidizer unit and a direct contact cooler. The oxidizer unit receives an exhaust flue gas from a marine engine through a fluid inlet at a temperature between 150 degrees Celsius and 550 degrees Celsius, and converts at least a portion of the nitrogen oxides in the flue gas into nitrogen gas, nitrogen dioxide, or both. The direct contact cooler is fluidly connected to the oxidizer unit, and includes a housing defining a cooling chamber. The direct contact cooler directs the flue gas into contact with seawater residing in the cooling chamber and cools the flue gas to a temperature less than or equal to 60 degrees Celsius. The seawater removes some or all nitrogen dioxide and sulfur dioxide from the flue gas in the cooling chamber.

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