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(54) Title: SYSTEM AND METHOD FOR CONTROLLING FIRED HEATER OPERATIONS

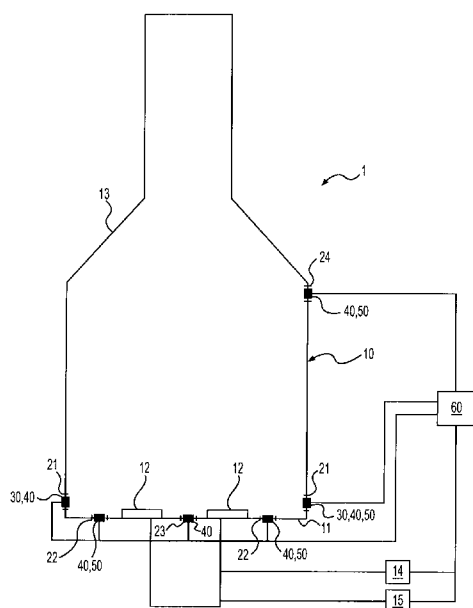


FIG. 2

(57) Abstract: Method of controlling the operation of a combustion device to provide safe and reliable operation while reducing NO_x emission that includes providing a flow of fuel and diluent at a determined volume ratio to a flame in the combustion device; providing a flame stability sensor to generate a measurement of a characteristic of the flame, providing a flow measurement for each of the fuel and diluent, and controlling the determined volume ratio of fuel:diluent using the measurement from the flame stability sensor and/or flow measurements. A combustion system incorporating this method also is included.

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