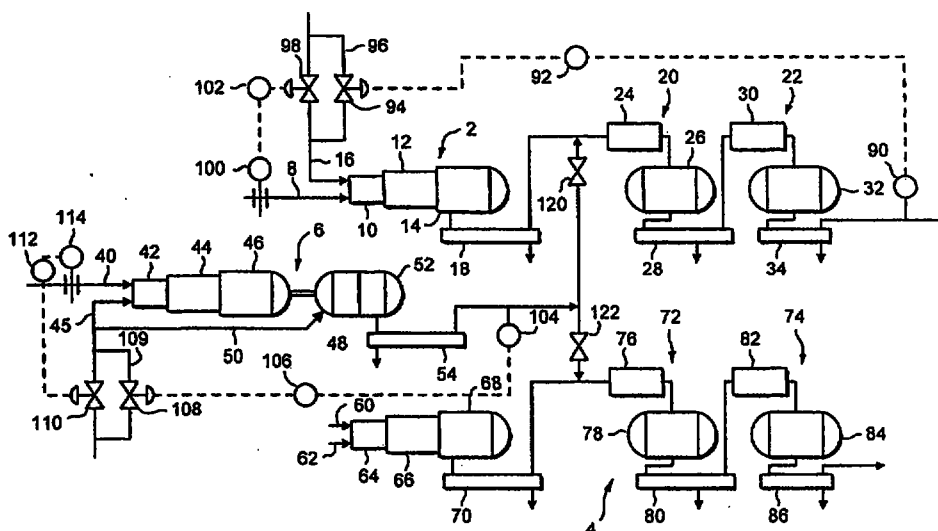




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(54) Title: TREATMENT OF COMBUSTIBLE GAS STREAMS CONTAINING HYDROGEN SULPHIDE



(57) Abstract

A first combustible gas stream containing hydrogen sulphide is subjected to treatment in a first Claus plant including a first thermal Claus stage. Part of the hydrogen sulphide content of a second combustible gas stream containing hydrogen sulphide is burned in at least one further thermal Claus stage. The combustion is supported by oxygen-enriched air having an oxygen mole fraction of at least about 0.25 or by oxygen. Resulting sulphur dioxide reacts with residual hydrogen sulphide to form sulphide vapour which is condensed out of the effluent gas from the further thermal Claus stage to form a sulphur-depleted effluent gas stream. A first control signal is generated which is a function of the flow rate of the second gas. A second control signal which is a function of the hydrogen sulphide/sulphur dioxide mole ratio in the sulphur-depleted effluent stream is also generated. The control signals are employed in setting the rate at which the combustion-supporting gas is supplied to the second thermal Claus stage.