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UNION STEEL S AFRIC (BATE/) *EP -270-226-A
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Treating raw gas, e.g. for conversion of carbonaceous material - in plasma arc heater, giving synthesis gas

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In treatment of a raw gas, e.g. the gas liquor from the conversion of a carbonaceous material, e.g. coal, to a liq. and/or gaseous component, or similar raw gas obtd. eslewhere, (part of) the gas is passed through a plasma arc heater, to convert (part of) the carbonaceous component, together with CO_2 and/or water vapour present or added, to a mixt. of CO and H_2.

USE

The CO and H_2 prod. can be used in synthesis, e.g. of liq. petroleum.

ADVANTAGE

The amt. of unwanted material to be removed by water washing is lessened, thus reducing the problem of waste water disposal.

PREFERRED PROCESS

The raw gas stream is obtd. from a Lurgi-type coal gasification process. Solids and/or unwanted heavy components in the gaseous prod. can be removed by scrubbing, or (partly) by further conversions in a plasma arc heater or a reaction chamber downstream of the plasma arc heater. The gas prod. from the converter can be cooled by passing it through water.

APPARATUS

The appts. includes at least 1 pref. at least 3 plasma arc heaters of capacity 8.5 megawatt, together with gas converters, each connected to the corresp. plasma arc heater by a sliding valve. Each gas converter is lined internally with special brickwork which is resistant to high temps. and thermal shocks, and has L/D ratio of 5-10: 1 pref. 7:1.(3pp510CGDwgNo0/0).

(E)ISR: No Search Report.

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