86-013418/02 H08 TEXC 05.07.83
TEXACO INC 12. *US 4559-061-A
19.10.84-US-662661 (+US-510488) (17.10.85) C10j-3/48

Synthesis gas generation in appts. under controlled conditions - in which mole ratio of steam to dry gas is maintained at predetermined valve using temp. as control parameter

C86-005646

Synthesis gas production by partial oxidation of hydrocarbon charge in apparatus which comprises

(a) a gasification vessel wherein a carbon-contg. fuel is partially oxidised in the presence of water and an oxygen-contg gas thereby forming a hot synthesis gas contg. carbon monoxide and H_2.

(b) an indirect heat exchanger wherein a 1st portion of the hot synthesis gas is partially cooled.

(c) a quench chamber wherein a 2nd portion of the hot synthesis gas is cooled.

(d) an upstanding attenuated scrubbing vessel.

(e) a 1st scrubbing portion of the scrubbing vessel wherein the partially cooled 1st portion of hot synthesis gas is scrubbed to form a further cooled portion of the hot synthesis gas.

(f) a 2nd scrubbing portion of the upstanding attenuated scrubbing vessel wherein the further cooled portion of the hot synthesis gas and the quenched 2nd portion of synthesis gas are scrubbed to form a final product synthesis gas having a predetermined mole ratio of steam to dry gas.

(g) means for measuring the temp. or flow of the final product synthesis gas exiting the 2nd scrubbing portion of the scrubbing vessel and for generating a signal corresponding to the measurement; and

(h) means for controlling the flow of the quenched 2nd portion of the synthesis gas to the 2nd scrubbing portion of the scrubbing vessel in accordance with the signal thereby maintaining a predetermined mole ratio of steam to dry gas in the final product synthesis gas.

H(4-E4, 5-J)

ADVANTAGES

The operation uses only one scrubbing vessel for the two gas streams, minimising capital and operating costs, and permits operation by measurement of a clean stream rather than by measurement of the soot-contg. streams leaving the quench operation or the indirect heat exchanger.

EMBODIMENT

The measuring means is a means for measuring temp.

(7pp1684RKMHDwgNo1/1).

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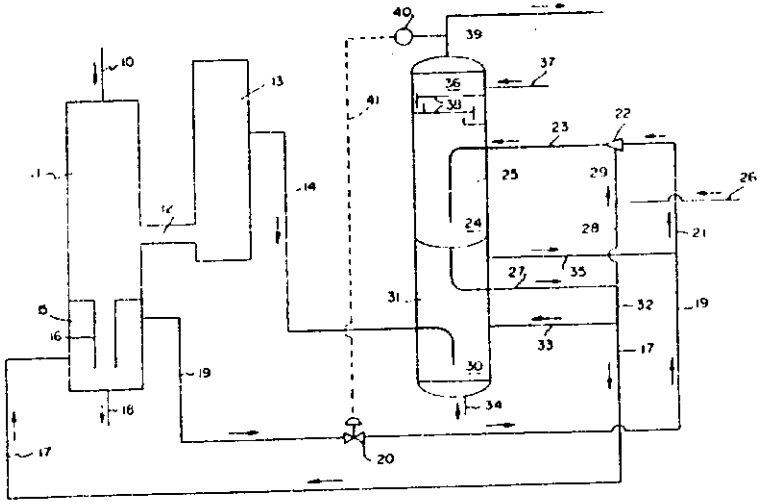
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85-074140/12 H06 TEXC 05.07.83
TEXACO INC *US 4502-869-A
05.07.83-US-510488 (05.03.85) C10j-03/46

Generation of synthesis gas - with control of steam to dry gas mole ratio

C85-032245

Synthesis gas is produced by partial oxidn. of a hydrocarbon charge, a first portion being cooled by indirect heat exchange and scrubbed before being combined with the quenched second portion en route to particulate scrubbing, the combined gas scrubber overhead having a desired steam to dry gas ratio controlled by regulating the flow the the quenched second portion in accordance with the measured properties of the combined scrubber overhead gas.

ADVANTAGE

Predetermined steam to dry gas mole ratio uses one scrubbing vessel for two streams, and control is by measurement of clean gas streams only.

OPERATING PARAMETERS

The first portion of hot synthesis gas contains 5-50 vol. % of the total hot synthesis gas, which is cooled by indirect heat exchange to 280-400°C. The second portion of hot synthesis gas contains 50-85 vol. % of the total hot synthesis gas which is cooled to 200-280°C in the quench operation. The further cooled first portion of the hot synthesis gas is at 150-300°C. Final product synthesis gas is at 170-240°C. Final product synthesis gas has predetermined mole ratio of steam to dry gas of 0.8-1.3 to 1, pref. 1.0-1.1 to 1, and esp. 1 to 1.

(8pp1684RHDwgNo0/1)

H(4-E5)

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