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 MAN MASCH AUGSBURG-NURNB *EP -182-992-A
 27.10.84-DE-439487 (04.06.86) C10j-03/54 C21b-13
 Prodn. of synthesis gas with high methane content - by gasifying
 carbonaceous fuel in system with regenerator and gas processing
 and recycle facilities
 C86-062109 E(BE DE FR GB IT NL)

E(31-A1) H(9-C) M(24-A1, 25-C2)

Synthesis gas is produced by gasifying a carbonaceous fuel. The raw gas is cooled in a regenerator and processed, and part of the gas is recycled to the gasifier after reheating in the regenerator.

The processing operation comprises cooling the gas in a heat exchanger and then in a condenser, scrubbing the gas to remove CH_4 and CO_2 , and reheating the gas in the heat exchanger and then in a heater, which also serves to generate steam. At least part of the steam is recycled to the gasifier.

USE/ADVANTAGE

The process operates with low energy consumption and without a shift conversion step (cf. DE3223702), producing synthesis gas with a high CH_4 content, esp. suitable for direct redn. of ores.

EMBODIMENT

The gasifier (1) is supplied with coal dust, O_2 , steam and recycle gas. The raw synthesis gas is cooled from 800 to 578°C in the cooling side of the regenerator (3) and then cooled to 60°C in the heat exchanger (4) and condenser (5). The CH_4 and CO_2 removed in the scrubber (6) are purged from the system and used for other purposes. The scrubbed gas is compressed (7), heated to 466°C in the heat exchanger (4), heated to 900°C in a heater (8) fired with CH_4 from the scrubber, and used for direct redn. of Fe ore in a redn. reactor (9). The steam from the heater is used to drive a turbine (10) and then recycled via the regenerator to the gasifier. The turbine supplies the electricity requirements of the process, including that for fractionation of air (11) to produce O_2 for the gasifier. The partially oxidised gas from the redn. reactor (9) is heated to 750°C in the regenerator and recycled to the gasifier. (14pp367RKMHDwgNo1/1).

(G)ISR: No Search Report.

